University of Alberta

Ideology, Science, and Discourse in Contemporary Society

by

Gordon Lindsay Hay ©

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Abstract

This thesis is comprised of two sections. The substantive focus of the first section is a clarification of the concept of "ideology" as it is found in the works of Karl Marx and Antonio Gramsci. I endeavour to highlight both the similarities and differences between the perspectives that each brings to Marxist theory. The second section of the thesis is devoted to a study of ideology in advanced capitalist society, with a specific focus on the discourses which are germane to the status of science in society. Those discourses include pedagogical practice and curriculum content in secondary educational institutions, a philosophical critique of science -- carried out by the Frankfurt School of Social Research, and a discussion of science as an integral component of ideology in advanced capitalism. I attempt to explicate the manner in which the theoretical study of the first section informs the more contemporary debates in the second section.

Acknowledgements

It is, of course, customary to name the 'usual suspects' when offering thanks to friends and colleagues who have assisted in many and varied ways toward the completion of an academic work. Given the unique circumstances under which this work has come to fruition -- that is to say, the span of many years from its inception to its completion, and the physical assistance that the majority of writers do not require, but which is mandatory in my case -- I am beholden to a small legion. I do not wish to neglect mention of any individual; I shall solve this problem by simply extending my thanks to all of the graduate students of Educational Policy Studies who have assisted me in a variety of ways.

Individuals to whom I especially wish to express my thanks include the following: Dr. Raj Pannu, who has been my chief advocate over the years; Dr. Raymond Morrow, who has encouraged me and served as my mentor in the understanding of the issues involved in Critical Theory; Professor Charles Nunn, who some twenty years ago inspired me to question the 'received truths' about capitalist society.

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Chapter One

General Introduction

The terrain of advanced capitalism presents a problematic for theoretical study and political critique that tasks us as we approach the end of the millennium. Even as recently as twenty years ago, the topography of capitalism appeared relatively smooth. A certain amount of systemic unemployment was an acceptable price to pay for what seemed to be an assured open-ended expansion of the productive capacity of capitalism with its concomitant promise of the deliverance of the 'good life' to the majority of the population. The vagaries of the Keynesian business cycle (for Marx, the tendency of the rate of profit to fall) were dealt with more or less confidently through the manipulation of finance capital by private and public institutions.

At the present time, however, we discover that capitalism, ever the changeling, has embarked upon a voyage into uncharted waters. Some of the features of the "new capitalism" include healthy, if not unprecedented, profitability on the part of large capitalist enterprises; the adjunct feature that is unique about this phase of capitalism is that unemployment is rising across the board in the advanced capitalist countries -- perhaps a confirmation of Marx's assertion that the replacement of living labour by the machinery which it created is finally expressing itself systemically throughout the capitalist system. The corollary of this structural development is the emergence of a permanent lumpenproletariat even within the centres of advanced capitalism. The income disparity between the very wealthy and the poor is growing ever faster, while the so-called "middle class" is finding its structural location within capitalism vanishing as a consequence of 'growth without employment'. For a period spanning some thirty years following World War II, the state assumed an ever greater role as an arbiter of the contradictions of capitalism. Thus were social 'safety nets' established that provided minimal relief for the poor and indigent. A further corollary of the 'new capitalism', however, is that the state is withdrawing from its responsibility as a provider of health care and a minimal standard of living -- a responsibility that had become institutionalized in the contemporary period.

These developments within late capitalism have spawned a multitude of theoretical problematics -- political, economic, cultural. That which I wish to focus upon in this paper is the fracturing of dissent, the elimination of even the possibility of that discourse which Marcuse called the 'Great Refusal' the right, the ability, and the forum to deny the positivity of an exploitative and repressive social order. The marginalization of discourse which challenges the prevailing social order is not an accident; it represents the effective closure of the normative totality of late capitalism. It is no longer an option to speak out forcefully, coherently, and with the passion of the conviction of moral and political certitude. Those who deny the positivity of the present do not have an audience; furthermore, they risk their employment, their standing as responsible citizens, and so on.

I begin from the certainty that we live in a dangerously disordered society.[1] We do not care for our disadvantaged, the marker -- the ethical beacon -- of a civilized culture. The United States has, since the Second World War, prosecuted the aspirations of peoples throughout the world on the grounds that they were communists and atheists. Everywhere that the United States has exercised its putative right of World Policeman, the 'bodycount' has risen with a Kafkaesque horror -- mere numbers in the history books. Whether by direct or by proxy military or political action, the United States -- the chairman of the board of international capitalism -- has toppled legitimate governments, and has presided over the murder of hundreds of thousands of civilians from Central America to Indonesia. In the Indochina war, perhaps as many as three million people were killed, a large majority as a consequence of indiscriminate 'saturation bombing' by flotillas of bombers raining their death from 30 000 feet. By the same criteria which were applied at Nuremberg, several members of the Washington foreign policy elite who prosecuted that war ought to have been brought to account for war crimes. Indeed, the dispassionate, high-technology fashion in which the American military meted out genocide to a peasant society makes the homicidal regime of Nazi Germany seem working-class.

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[1] I am tempted to exercise the hubris of exclusion from that political, economic, and cultural madness that is the United States of America. Such an exercise, however, denies the culpability of the other countries of advanced capitalism, as they allow America to 'carry out the dirty work', as it were, on their behalf and in their interests.

But, I do not wish to lapse into polemics. This paper is, for the most part, theoretical in nature. I wish to examine the genesis and evolution of the concept of "ideology." My quest is motivated by the aforementioned polemics, for a sensible person must necessarily, in a contemplative moment, question the social dynamics whereby the atrocities that I have briefly alluded to remain absent from mass political dissent.[2] Clearly, only a profoundly powerful and ubiquitous belief system can function to enable otherwise decent humans to accept the unacceptable. It is my task, therefore, to investigate the concept of 'ideology', to bring it to the light, and to examine its workings in contemporary society.

The first chapter of the paper will be devoted to an excavation of the theoretical works of Karl Marx. It is in the works of Marx that we find the genesis of a critical theory of society, and a critical understanding of the mechanisms whereby a distorted, ideological, social consciousness is generated. The second chapter will involve an expansion of the ideas of ideology and false consciousness as they were articulated by the Italian Marxist, Antonio Gramsci. I have chosen to limit the discussion of ideology to Marx and Gramsci solely as a consequence of the existence of the multitudes of Marxist interpretations of ideology, interpretations which present the student with material enough for an extended critique. Furthermore, other schools of political thought, e.g., classical liberalism, are possessed of a very different conceptualization of ideology. Again, a critique of that and other perspectives will not be within the purview of this paper.

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[2] The anti-war movement in the United States derived its most significant impetus from the numbers of body bags which were returning in ever greater numbers to America. The moral outrage was actually of secondary significance. The liberal politicians who became anti-war experienced their 'sea-change' as they realized the fact that the war was not winnable, not out of moral indignation.

The second section of the paper will consist of a more empirical examination of the status that science enjoys as an integral component of ideology in contemporary capitalist society. I shall present a critique of science from a number of critical perspectives, most notably that of the Frankfurt School of Social Research and their *Dialectic of Enlightenment.* As a student of pedagogical discourse, I will examine the current location of science within that discourse and offer a critique of science and society from that perspective. Although the chapters dealing with Marx and Gramsci are more theoretically grounded, I will endeavour to point to the relevancies of each with reference to their conception of science and society, offering, in the process, an assessment of the strengths and deficiencies of each.

Chapter Two

Method and the Critique of Ideology in Marx's Theoretical Programme

Introduction

The substantive focus of this chapter will be a clarification of Marx's method and the intent of his theoretical programme. Specifically, I will contend that negative dialectics [3] remained central to Marx's programme, from his initial confrontation with Hegel to his elaboration of the critique of political economy. Furthermore, I intend to demonstrate a fundamental continuity in Marx's programme wherein his debt to Hegelian theoretical method and concepts continually appear, both implicitly and directly. As is the case with all social/philosophical critique, the works of Marx demonstrate continual evolution, growth, and reformulation throughout his career. Some of the main issues that I wish to illuminate are the following:

First, there is, in Marx, a normative commitment to the transcendence of the alienation of the human species; this normative/political imperative informs his theoretical works from the very earliest critique of Hegel to the later critique of political economy. Second, the critique of ideology is a central motif in all of his works from 1845 onward. Although the concept undergoes reformulation from its appearance in *The German Ideology* to its usage as negative dialectics in *Capital*, I will attempt to highlight its importance throughout the chapter. Finally, I shall endeavour to point out some of the problematics which arise from Marx. For example, Marx's attempt to establish a critical cultural science was not without its problems, especially insofar as his conception of ideology remained narrow. Also, there is, in Marx, an unresolved contradiction in the tension between emancipation and science as the conquest of nature.

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[3] 'Negative dialectics' is used to designate specifically the mode of philosophical discourse which was introduced by Hegel in his *Logic of Science*. In dialectical (critical) reason, the world of 'facts' or positivity is viewed as the realm of phenomena wherein we discern reality in its appearance. For Hegel, there existed a deeper level of Reason which was singularly capable of excavating a deeper, hidden level of reality that lay behind the world of phenomena. Dialectical reason allowed Hegel to understand the historical process as the ultimate realization of the Absolute Spirit. For Marx, negative dialectics achieved a substantive focus; there was indeed a hidden reality -- the reality of contradiction, and it was his method and his theoretical project to expose the 'truth behind the appearance', as it were.

The central problematic of this chapter will be Marx's conception of ideology. For Marx, ideology was the representation in consciousness of contradiction in reality:

Ideology = the '*zeitgeist*' or collective social consciousness of an era of human society.

Contradiction = a distorted social practice. By 'distorted', I mean the exploitation of one class by another, the domination of women by men, etc.
In Marx's view, ideology was not so much a 'false' consciousness rather than an inverted consciousness which was constructed/mediated by the existence of contradiction in society. In Marx's theoretical works, the implications of his conception of ideology for working class consciousness and political struggle were not systematically explored, however -- this presents a further problematic in that it is not altogether clear whether Marx considered the *zeitgeist* of an age to be wholly ideological or to actually contain 'untainted' knowledge (e.g., science). This problem in praxis would be left for a future generation of theorists (Lenin, Lukács, and Gramsci).

Within the Marxist tradition, there exist a variety of different formulations of ideology, each of which operates on the basis of underlying assumptions vis-à-vis the nature of contradiction, the cognitive process, the determination, mediation, and construction of consciousness, and so on. These disparate formulations in Marxist theory derive from different theoretical preconceptions as well as an emphasis on selective elements of Marx's works.

At one extreme, the structuralist Marxist tradition (as exemplified by, e.g., Louis Althusser) ascribes the greatest emphasis to the institutional structures of capitalist society (school, state, media, family, etc.) with regard to the construction of social consciousness. In its cruder forms, the structuralist understanding of the

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construction of cognition views the human subject as a *tabula rasa* into which knowledge (and particularly, distorted, ideological knowledge) is ladled by the institutions of capitalist society.

The antithetical point of view is exemplified by postmodernism and the deconstruction of Marxism, in which the institutions of society are fragmented and of lessened theoretical concern when placed alongside the concepts of the cognitive subject, human agency, and dialogic interaction.

Theoreticians such as Antonio Gramsci occupy a middle ground that is cognizant of both theoretical extremes. Gramsci, while fully aware of the importance of the institutions of capitalism in the construction of social consciousness, was much more concerned with the mediation of consciousness by social practice, the everyday lived experience of the members of a social order. It is the works of Gramsci which I will explore in the following chapter as the most significant enrichment of the Marxist tradition in the 20th century.

Marx's works must be understood in the context of the intellectual tradition from which they emerged -- classical German philosophy. For it was through his critical dialogue with the works of Hegel that Marx developed his mode of dialectical presentation, probing the dynamic of an ever-changing reality -- in contrast to the static and reified formulations of bourgeois political economy.[4]

The structure of this opening chapter will be developed in the following manner: First, I feel that it is necessary to examine Marx's relation to Kantian philosophy, specifically Kant's distinction between the world of phenomena and the essential reality which lay behind sensation -- the noumenal realm. (In Hegel's critique of

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[4] cf. the *Economic and Philosophic Manuscripts of 1844* where "the economist assumes in the form of a fact, of an event, what he is supposed to deduce -- namely, the necessary relationship between two things" (p.63).

Kant, these concepts were reformulated as 'thing-for-itself' and 'thing-in-itself').

The second section of the chapter will address Marx's critique of Hegel (ie., those works which are prior to *The German Ideology*).[5] The third section will be concerned with Marx's elaboration of the materialist conception of history. It is in *The German Ideology* that we find the notion that the formation of ideas is mediated by material practice; this will support the view that ideas which are generated by a contradictory material practice are necessarily deficient.

The final section will discuss science and critique in the later works of political economy. An important aspect of this project will be the investigation of Marx's understanding of science: did he in fact differentiate between 'cultural' science such as political economy (and to which a critical dialectic may be applied as a method of critique) and the natural sciences, which have until recent times occupied a lofty and sacrosanct epistemological status.

Marx and Kant

Marx does not undertake an explicit critique of Immanuel Kant, but he does accept much of Hegel's critique of the Kantian tradition. Nevertheless, a number of points in this critique are crucial in the understanding of Marx's approach to ideology -- especially with regard to the form/essence distinction which is central to the method of *Capital* and which underlies Marx's understanding of ideological modes of thought.

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[5] I do not wish to give the impression that my critique is now going to acknowledge an 'epistemological break', in that *The German Ideology* is generally cited as the point where Marx discarded philosophy in favour of science. For the purposes of this chapter, I simply choose this juncture as marking the end of Marx's systematic critique of idealism.

Marx's critique of philosophy, religion, and ultimately, political economy, has an essential historical connection to the break that Kant made with traditional epistemology (i.e., *Critique of Pure Reason).* Kant held that Reason could order experiential knowledge, but that it was inadequate for the bringing to scrutiny of the noumenal realm -- the 'thing-in-itself'. [6] As Zeleny (1980, p. 201) points out, Marx was closer to Kant than to Hegel in this recognition of the limits of Reason.

Although it must be made clear that Marx, with Hegel, saw Reason as historical and in continual transition, therefore, whereas Kant's conception of Reason was as an endeavour lying outside of history. And, as I.I. Rubin (1972, p. 117) notes:

> One cannot forget that, on the question of the relation between content and form, Marx took the standpoint of Hegel and not of Kant. Kant treated form as something external in relation to the content, and as something which adheres to the content from the outside. From the standpoint of Hegel's philosophy, the content is not in itself something to which form adheres from the outside. Rather, through its development, the content itself gives birth to the form which was already latent in the content. Form grows necessarily from the content itself.

Nevertheless, it may be argued that Marx was more in debt to Kant than he would have acknowledged. After all, Kant **did** accept the validity of knowledge and reason in the world of phenomena, whereas Hegel understood both the noumenal (the world of essence) and phenomenal (the world of appearance) to be antithetical manifestations of the Absolute Spirit.[7] The ultimate reconciliation of these two modes of reality would occur at the end of history, but for Hegel the resolution would take place entirely within the realm of the Idea. Human agency, in the form of political action, is seen to be irrelevant as a mode of transforming the world and its economic and political relations. It was this idealist conception of philosophy that Marx sought to 'stand on its head', in no small measure because Marx found its conclusion to be ultimately quietistic for social change.

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[6] In Kantian usage, noumena constituted reality in its essential form. The noumenal realm was, for Kant, inaccessible to Reason. The phenomenal manifestation of noumena formed the world of objects and experience.

Further, Marx shared Kant's perspective that the 'absolute standpoint' of knowledge was humanity (Zeleny, p. 201), in contrast to Hegel's Absolute Spirit. It was the process by which a contradictory social practice distorted the representations of reality by knowledge that Marx came to understand as ideological thought. Thus, I would argue, there is fertile ground for inquiry regarding Marx's debt to Kant -- that is not within the purview of this paper. Suffice it to say that the critique of political economy, ultimately Marx's most important work, owed much to Kant's problematic of essence and appearance. Marx's critique was directed at a discovery of the limitations of political economy and why it was unable to apprehend the essential relations of the capitalist mode of production.

Marx's Critique of Hegel

Although Marx is not concerned with the problem of ideology in his early writings; in fact, he does not employ the term, his critique of religion and the critical dialogue with Hegel provide the theoretical bases for his understanding of ideological thought. I will separate Marx's confrontation with Hegel into the following sections: First, Marx's critique of Hegel's method. The second part of this section will be concerned with the critique of religion. Finally, the concept of alienation will be examined. I do not in any sense wish to suggest that these divisions are programmatic (on the part of Marx). They simply represent the temporal evolution in Marx's thought and works.

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[7] To use Hegel's language from his *Science of Logic*, Being is posited as the phenomenal representation of Essence, the noumena. The synthesis of Being and Essence resulted in the Notion, or the Absolute Idea.

The Critique of Method

Marx's confrontation with the Hegelian conception of law and the state initiated the process of self-clarification which culminated in historical materialism. [8] Hegel conceptualized the state as the projection of the Idea (self-consciousness) onto the empirical, objective world. The state was the substantiation of the concept as a phenomenal form. Thus, Hegel made the error of assuming the *a priori* validity of the extant, objective world, since it is the phenomenal manifestation of the Absolute Spirit -- to quote Marx:

> A further consequence of this mystical speculation is that a particular empirical existent, a single empirical existent distinct from all others, is deemed to be the Idea in empirical form . . . As the whole point of the exercise is to create an allegory, to confer on some empirically existent thing or other the significance of the realized Idea, it is obvious that these vessels will have fulfilled their function as soon as they have become a determinate incarnation of a moment of the life of the Idea (Colletti, 1974 i, p. 99).

This metaphysical 'sleight of hand' leads Marx to critique at two levels, the first theoretical and the second practical, in the sense of the outcome of Hegel's theoretical error. First (and ironically), Hegel's method produces the same error for which Marx would criticize political economy (beginning with the 1857 *Introduction to a Critique of Political Economy*).[9] For Hegel, the category of the State is simply granted, posited as fact, without considering the contradictions which underlie its empirical existence. To be sure, Hegel understood contradiction as an essential ontological category, or rather as an essential feature of the relations between logical categories. But for Hegel, the reconciliation of contradiction was contained in its self-recognition. Marx recognized this 'apparent' resolution of contradiction into the identity of its constituents as a distortion in thought, as ideology. Hegel solved the problem of contradiction through an intellectual operation; in Hegel's system, contradiction was superseded in theory, not in reality -- "Hegel's chief error is that he regards contradiction in the phenomenal world as unity in its essence, in the Idea. There is however a profounder reality involved, namely an essential contradiction" (Colletti, 1974 i, p. 158). (This bears a remarkable similarity to Marx's criticism of James Mill in *Theories of Surplus Value-III*; i.e., Mill dissolves contradictions in capitalist economy into their unity.). In other words, the resolution of contradiction in consciousness is only an apparent resolution. The real resolution must occur in practice.

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[8] Excerpts are from Colletti (1974). They will be noted as Colletti (1974, i) for "Critique of Hegel's Doctrine of the State" and Colletti (1974, ii) for "A Contribution to the Critique of Hegel's Philosophy of Right."

Second, the assumption that the state is a phenomenal manifestation of the Absolute Idea -- the objectification of an absolute meta-subject[10] -- becomes a conservative justification for its existence. The state assumes its phenomenal form as a justification for its existence. The state assumes its phenomenal form as a necessary consequence of its conceptualization in thought. Again, this represents a congruence with empiricism and liberal political theory, although the latter hypostatizes the empirical as an ideal form. In both cases, thought conceals the real state of things by granting an uncritical validity to the existent. Indeed, it is reasonable to locate Hegel in the tradition of political liberalism, insofar as he believed that the emergence of the modern state was the terminus of history.[11]

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[9] The difference between Hegel's philosophy and the uncritical positivism of English political economy is, of course, profound. Hegel understood the existent as a manifestation of the Absolute Spirit. Consequently, the Absolute State was legitimated uncritically. Political economy, on the other hand, accomplished the reification of bourgeois capitalism.

[10] In *History and Class Consciousness*, Lukács elevates the proletariat to the status of an historical meta-subject. This is the focus of his self-critique when he admits to attempting to 'out-Hegel Hegel'.

The Critique of Religion

Marx's critique of religion began as a rearticulation of Feuerbach's materialism,[12] that is to say, by understanding religion as a projection of the human 'essence' (or, what is 'good' in the human essence) onto a supreme Being. "Man makes religion, religion does not make man" (Colletti, 1974 ii, p. 244). Of course this was also directed against Hegel, who understood the Absolute Idea to be substantiated in the world through the mediation of self-consciousness. Marx realized that the religious sentiment must, of ontological necessity, be grounded in reality, and not simply be a metaphysical, speculative, process in thought. Religion was a consequence of real contradiction (alienation and oppression) in the world -- "Religious suffering is at one and the same time the expression of real suffering . . . . The criticism of religion is therefore in embryo the criticism of that vale of tears of which religion is the halo" (Colletti, 1974 ii, p. 244).

It is here, in Marx's early critique of Hegel and religion, that we may discern the beginning of a critical (materialist) understanding of ideological thought. The between civil society and political society. Thought, by forcing the identity of civil and political society -- a false identity -- justifies what is in fact a relationship of domination. Similarly with religion, the Hegelian negation of the negation reconstitutes religion as theological rationalism [13] rather than grasping religion as expressive of real, existential, contradictions. In both cases, Marx apprehends that contradictions in material life are obscured; i.e., they are inadequately reproduced in thought.

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[11] In *Ideology and Utopia*, Mannheim provides a thorough examination of the precepts of liberalism as they relate to the self-understanding of liberal theory. The attainment of liberal (capitalist) society is the end of history.

[12] All citations of the "Theses on Feuerbach" are to be found in the appendix of *The German Ideology* which is listed in the Bibliography.

Alienation

The *Economic and Philosophic Manuscripts of 1844* focusses on a problematic which will be reproduced in *Capital* -- alienation. This was the most significant positive element of Marx's critique of Hegel, for alienation was a central concern for both. At this juncture, Marx still agreed with Hegel that the historical process was teleological. An original unity of man and nature had been sundered and the subsequent history of humans was their alienation through their life-process, the objectification of their activity. The terminus of history was viewed as transcendence -- the reconciliation of alienation (in Hegel's language -- affirmation, negation, negation of negation). But for Hegel, alienation was a fundamental ontological condition. "The supersession of the alienation becomes a confirmation of the alienation; or for Hegel this movement of self-genesis and self-objectification in the form of self-alienation and self-estrangement is the absolute, and hence final, expression of human life" (Marx, 1974, p. 142). Again, the critique of Hegel hinges on his resolution of contradiction in a contradictory consciousness, the resolution of estrangement within estrangement.

Marx, on the other hand, came to understand alienation as a historically contingent form of objectification. Alienation is not identical to the objectification of the human 'essence' or species-being. Rather, it derives from the social activity of human labour which is carried out under conditions of domination and servitude. Marx was very clear, by 1844, that alienation was a consequence of real social conditions and he was working toward a materialist conception of praxis, whereby the human subject can -- through praxis -- come to apprehend alienation and actively transcend it: "Communism as the positive transcendence of private property as human self-estrangement, and therefore as the real appropriation of the human essence by and for man" (ibid., p. 90).

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[13] This idea is developed in the *1844 Manuscripts*.

Marx's conception of alienation in the *Manuscripts* still employs Feuerbach's 'natural human essence.' This ontology was an a-historical, idealist notion which devolved from Marx's (and Feuerbach's) attachment to classical German philosophy, even in their critique of it.[14] Marx, also held, with Feuerbach, that religion was a form of alienation; "i.e., another form and manner of existence of the estrangement of the essence of man; hence equally to be condemned" (ibid., p. 126). But Marx goes beyond Feuerbach in his critique of Hegel, for he discerns, albeit in abstract, speculative form, social and economic alienation in Hegel's historical synthesis -- alienation in Hegel is not exclusively the alienation of Spirit in the process of thought. Hegel's conception of the negation of the negation is "the abstract, logical, speculative expression for the movement of history" (ibid., p. 127). Marx's elaboration of man's self-alienation in the labour-process -- both creating, and created by, private property -- confirms his position regarding the historically specific nature of alienated objectification; and this leads further to a normative commitment for the supersession of alienation through praxis as the starting-point for a critique of capitalist social relations and the cultural and ideological forms that attend them.

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[14] The following year, Marx jettisons Feuerbach's notion of a supra-historical 'essence'. For example: "Feuerbach resolves the religious essence into the *human* essence. But the human essence is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations" ("Theses on Feuerbach" VI).

Although Marx does not use the term "Ideology" in the *Manuscripts*, a number of themes are presented which are central to its development. The Hegelian concept of contradiction is a motif which is developed in ever richer elaboration throughout Marx's career. In the *Manuscripts*, attention is given to the principal contradiction inherent to capitalism -- wage-labour/capital (cf. Larrain, 1983, p. 150). Alienation in the productive process is expressive of the contradiction within which labour produces capital and produces itself, or rather objectifies itself as estranged labour. But "political economy conceals the estrangement inherent in the nature of labour by not considering the direct relationship between the worker and production" (Marx, 1974, p. 65). Here, Marx clarifies his understanding of political economy as an ideological operation which fails to apprehend the alienation of species-being in wage-labour.

As we noted earlier, Hegel's supersession of contradiction was contained in self-recognition of contradiction in thought; Marx dismisses this metaphysical operation with growing surety:

> Self-conscious man, insofar as he has recognised and superseded the spiritual world as self-alienation, nevertheless again confirms it in this alienated shape and passes it off as his true mode of being -- re-establishes it, and pretends to be at home in his other-being as such . . . Here is the root of Hegel's false positivism (ibid., p. 139).

Thus, Hegel's dialectic again becomes an intellectual exercise which succeeds in justifying the existing state of affairs; again, his thought serves the same (ideological) end as does the positivism of political economy. This will be a dominant theme in *Capital*. To this point, the conception that Marx holds of ideology has been based mainly upon religion. There is now a transition to an understanding of ideology as the consequence of flawed method. The critique of political economy seeks to discover the essential relations of capitalism, which are obscured by the focus of the bourgeois ideologues on the world of phenomenal appearances. Political economy is unable to penetrate to the level of essential relations and contradictions and is ideological, therefore. Through this journey of philosophical self-clarification, we may discern the extent to which negative dialectics is becoming central to Marx's method.

Nevertheless, Marx's debt to Hegel must not be diminished (cf. Marcuse, 1972). Marx dismisses as mystical speculation Hegel's positing of the mind as Absolute and the hypostatization of a meta-subject which carries with it the inversion of subject and predicate, and the identity of subect/object in the substantiation of empirical reality. On the other hand, Marx, like Hegel, understood that the self-creation of man was a process, and that labour was the essence of man in the act of self-creation. Most importantly, both apprehended objectification as loss of the object. For Marx, alienation was, in a sense, the 'metaphysical' moment of his most important substantive claim vis-à-vis capitalist production -- the labour theory of value.

Historical Materialism

Even Marx's early writings demonstrate his awareness that critical method must be grounded in empirical reality. To remain at the level of philosophical critique, he understood, was to simply reproduce that idealism which was the object of critique. Hence, while his central problematic in the early writings was a Hegelian one; viz, the self-alienation of man, Marx apprehended the necessity for its supersession in practice.

By 1845, Marx had moved beyond the one-sided materialism of Feuerbach toward a dynamic, dialectical understanding of human consciousness and the constitution of consciousness in practice, in changing historical circumstances:

> The chief defect of all hitherto existing materialism (that of Feuerbach included) is that the thing, reality, sensuousness, is conceived only in the form of the object or of contemplation, but not as sensuous human activity, practice, not subjectively . . . . The coincidence of the changing of circumstances and of human activity or self-changing can be conceived and rationally understood only as revolutionary practice (Marx, "Theses on Feuerbach" I, III).

The German Ideology was the first programmatic statement regarding Marx's historical method,[15] and it was also the only text in which a systematic exposition of ideology was presented. For these reasons, it is an important work, even though it is viewed as suspect or 'un-scientific' by many Marxists (eg. Althusser).
Marx is no longer immediately concerned with the philosophical problematic of the alienation of human essence and its supersession in communism. Instead, the focus, and the starting point of inquiry "are the real individuals, their activity and the material conditions under which they live, both those which they find already existing and those produced by their activity" (Marx, 1970, p. 42).

The discussion is now concerned with the way in which the forms of the human life process have changed in historical time, and with the relation between consciousness and the various social forms. Thus, we can discern in *The German*

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[15] I use the term 'programmatic' in the sense of Marx and Engels theoretical development. It is important to realize that *The German Ideology* was not published in Marx's lifetime, and like the *1844 Manuscripts*, it was not accessible to the first generation of post-Marxists.

Ideology an outline of the relationship between consciousness and social practice--a general theory of ideas. Also, within this general formulation, there is embedded the idea of distorted knowledge -- ideology -- which arises from an inverted or contradictory life practice, a "limited material mode of activity."

> The production of ideas is at first directly interwoven with the material activity and the material intercourse of men, the language of real life . . . . Consciousness can never be anything else than conscious existence, and the existence of men is their actual life-process (ibid., p. 47).

This statement is important as a critique of the one-sided materialism of orthodox Marxism. Consciousness is not simply a reflection of material conditions or an 'interpellation' by ideological structures, but is, rather, formed and mediated by practice, in specific historical circumstances. Consciousness cannot be anything but "from the very beginning a social product" (ibid., p. 51).

Here, Marx is providing a glimpse of his concept of the historical development of ideology. The first manifestation of ideological thought is closely tied to natural religion (cf., the 'idols' of Francis Bacon). Second, Marx indicates that he appreciates the importance of practical knowledge. These ideas presage Antonio Gramsci's elaboration of the different levels of social consciousness/false consciousness, which shall form one of the problematics of the following chapter.

At this level, knowledge seems to be unproblematic; consciousness is of 'the immediate sensuous environment'. However, and through the same process of mediation, the knowledge of nature does become problematic, since nature is experienced as 'alien, all-powerful, and unassailable'. Hence, the first form of ideology is natural religion, the expression in consciousness of insoluble contradiction (the struggle with nature) in the real world. Priests, Marx and Engels note, are the first form of ideologists, a development which is concomitant to the division of labour into manual and intellectual labour. "From this moment onwards consciousness can really flatter itself that it is something other than consciousness of existing practice; that it really represents something without representing something real" (ibid., p. 51).

So, consciousness is shown to be constituted in daily practical activity as well as in a dialogue with the structures which themselves embody prior human activity. Marx seems to make a distinction between knowledge which is epistemologically unproblematic, i.e., practical knowledge gained through daily practice,[16] and knowledge which is mediated by contradiction (i.e., ideology). For example, the principal contradiction of civil society -- capital/labour -- is obscured by a number of ideological operations (cf., the introductory chapters of *Capital*, vol. 1). The ideas of the free market and the exchange of equivalents (discussed below), and formal political democracy conceal the unfree and undemocratic nature of human labour in capitalist production.

It is important to note that Marx did not view ideology as simply cognitive dysfunction, to the extent that, for example, "all struggles within the State . . . are merely the illusory forms in which the real struggles of the different classes are fought out among one another" (ibid., p. 54). As with all thought, ideology is to be understood as formed by real material practice, a practice, however, that may not be discernible in its essence as contradictory. As Marx puts it: "if in all ideology men and their circumstances appear upside-down as in a camera obscura , this phenomenon arises . . . from their historical life-process" (ibid., p. 47).

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[16] This corresponds to what Gramsci had in mind when he discussed common sense/good sense. Even though practice may be contradictory (characterized by domination and exploitation), a body of knowledge must exist which is simply practical or functional -- i.e., common sense.

Thus, ideology is generated by an inverted or contradictory practice, and it can be combatted, not by a philosophical critique of its own presuppositions, but by a critique of the contradictions in material practice which actually exist:

> This conception of history . . . explains the formation of ideas from material practice; and accordingly it comes to the conclusion that all forms and products of consciousness cannot be dissolved by mental criticism (ibid., p. 58).[17]

The salient features of Marx's early works may be summed up as follows: In the early critique of Hegel, Marx detects a two-fold inversion. First, for Hegel, reality was not 'real'; the empirical world was the substantiation of the Idea. An inversion of subject and object has occurred, to the extent that Hegel does not consider the human act of creating the world except as 'abstract human labour'. Second, the real empirical world becomes hypostatized as the incarnation of Reason; this philosophical operation is very similar to that which classical liberalism and political economy carry out. Private property is seen by Hegel as the projection of the will -- "private property is no longer a determined object of wilfulness, but instead wilfulness is the determined predicate of private property" (Colletti, 1974 i, p. 168). "This is the basis of Hegel's false positivism, or of his merely apparent criticism." Hegel's dialectic surreptitiously restores the empirical world to the status of Absolute. In this way, the notion of a universal principle is invoked by Hegel to justify the existent. It is precisely this aspect of Hegel's dialectic which Marx will criticize in his critique of political economy, although the political economists perform the operation in reverse fashion; the political economists whom

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[17] This statement coincides with Marx's break with philosophy and philosophical critique. For he had, by 1845, clarified his view to the extent that a mere critique of ideas -- for which he criticized the Young Hegelians in *The German Ideology* -- cannot alone remedy the conditions which give rise to them.

Marx undertakes to critique in *The Grundrisse* and *Capital* take for granted the validity of the **apparent** laws (i.e., the phenomenal appearances) of economy and society. And although not arrived at using the same logical route, laws are nevertheless deduced by political economy which are then granted universal status -- they may be discovered in all modes of production rather than apprehended as being historically contingent.

Ideology and the Critique of Political Economy

My central argument regarding Marx's theoretical programme is that a fundamental theoretical continuity exists between the critique of Hegel and the critique of political economy. Three aspects of the critique of political economy support this assertion: Marx's dialectical method (negative dialectics); his scrutiny of the precepts of political economy with the intent of demonstrating their ideological nature; the ongoing central importance of the theme of alienation.

First, and notwithstanding allusions to 'turning Hegel right side up again', Marx's method in *The Grundrisse* and *Capital* employs a dialectic which is impossible to understand without reference to Hegel.[18] The posing of the positive, its negation, and the negation of the negation is central to the critique of political economy. Second, the form/essence distinction is the fundamental basis of the ideology critique which is embedded in Marx's dialectic and his critique of the positivism of political economy. For Marx, political economy was an exercise which examined the formal relationship between the components of economy. Marx's aim in *Capital* was to excavate the **essential** relationships between the formal categories of political economy. Third, the importance of the theme of alienation in *The Grundrisse* and *Capital*, a theme which appears again and again, demonstrates an ongoing normative commitment to the betterment of the human condition, even in these most supposedly 'scientific' of Marx's works -- this element in Marx's 'mature' works is virtually ignored by orthodox Marxism.[19]

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[18] In arguing for an 'epistemological break' in Marx's theoretical programme, Althusser seeks to confer valid epistemological status on Marx's political economy, by designating it 'Science'. But 'Science' is precisely what Marx is attacking as uncritical positivism in *Capital* in that it cannot grasp the congruence between the logical process and the process of reality. It is instructive to note that in his translation of *Capital*, Althusser has managed to expurgate the Hegelian dialectic.

Dialectical Method and the Critique of Political Economy

Prior to embarking upon the discussion of Marx's later works, it is incumbent upon the writer to clarify certain terminology. The use of the term 'contradiction' is undoubtedly familiar to students of the German philosophical tradition; however, students of philosophy as a discipline are aware that 'contradiction' is used by schools of thought which do not share the same precepts; indeed, 'contradiction' may be employed by philosophical traditions which may be extremely hostile to Marx and neo-Marxism -- some clarification is in order, therefore. In the Germanic tradition, contradictions are **substantive**, which is to say that they reflect real antagonisms in economy and society. To anticipate in advance a possible objection, even a so-called 'idealist' such as Hegel was developing the concept of 'contradiction' in such a fashion as to explain the substantiation of the Idea in existential reality.

Logical Positivism (to use but one example of a philosophical school which is highly inimical to Marxism) understands contradictions as 'ruptures' in a discourse in **formal** logic. Contradiction, for analytical positivism, is a theoretical error, therefore, rather than a substantive one. Thus, for Marx and Hegel, contradiction was a matter of practical importance, not simply an issue to be resolved through formal logic.

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[19] I use the term 'orthodox' marxism as equivalent to the so-called 'diamat' (dialectic materialism) of theorists who were resting their hopes with the Soviet Union regarding the eventual establishment of a true communist society. To be brief, this form of marxism became extremely rigid in understanding marxism as providing a 'recipe' for social evolution. Existing forms of capitalist society were seen as occupying a Moment in history. Their end was pre-ordained by the view that eventually the forces of production would explode the relations of production. Of course, Marx **did** express the demise of capitalism in these terms, but a century after he used them, it was clear that the evolution (and demise) of capitalism would not necessarily occur in just such a way. Yet, the orthodox marxists continued to repeat Marx's words as quasi-religious litany.

The dialectical movement of contradiction was crucial to both Marx and Hegel. For example -- Hegel (in Carver, 1975, p. 139) from his *Science of Logic*: "it is in this dialectic as it is here understood, that is, in the grasping of opposites in their unity or of the positive in the negative, that speculative thought consists." Marx's method throughout is an explication of contradiction in material life. In *The Grundrisse*, Marx goes to great effort to clarify the unity of production, consumption, and exchange as different moments of the totality (Marx, 1971, pp. 22-33). This is not merely an exercise in dialectics. He is endeavouring to establish the foundations for a critique of the method of political economy:

> As a rule his (Mill's) method is quite different. Where the economic relation -- and therefore also the categories expressing it -- includes contradictions, opposites, and likewise the unity of the opposites, he emphasizes the aspect of the unity of the contradictions and denies the contradictions. He transforms the unity of opposites into the direct identity of opposites. For example, a commodity conceals the contradiction of use-value and exchange-value. This contradiction develops further, presents itself and manifests itself in the duplication of the commodity into commodity and money . . . . Mill disposes of the contradiction by concentrating only on the unity of buying and selling; consequently, he transforms circulation into barter, then,

> however smuggles categories borrowed from circulation into barter (Marx, 1971 ii, III, p. 88).

Political economy is thus unable to grasp the nature of contradiction, which for Marx is intrinsic to the process of capitalist development in history. Marx understands categories such as wage-labour, capital, exchange, and so on, to be historically specific. In contrast, political economy grasps the categories as being subject to external, abstract laws of history, and it then substitutes bourgeois relations. "This is the more or less conscious aim of the entire proceeding" (Marx, 1971, p. 20).[20]

In this critique of James Mill, we are able to discern ideology critique embedded within the critique of political economy, for it is the existence of contradictions in reality that generates inversions in thought. In the critique of Hegel, Marx had already come to realize that philosophy was inverted because reality itself was inverted. This is of central importance for Marxist epistemology in the sense that ideology is not simply an illusion or a cognitive problem (i.e., a mistake), or a political viewpoint distinct from other opposing viewpoints. Just as religion is generated by an inverted material world that is nevertheless real, so too is political economy an ideological representation -- ie., an explanation that, while it does not penetrate essential relations, still expresses reality at the level of immediate experience.

An investigation of the actual method of inquiry demonstrates a further continuity between Hegel and Marx. Marx's scientific method moves at two levels, the real and the representation of the real -- the process of reality itself and the process whereby reality is apprehended and logically reconstituted in thought (cf. Colletti,

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[20] cf., *The Poverty of Philosophy* where Marx quickly dispenses with exactly this 'method' of assuming the validity of the existent (Marx, 1955, p. 25-27).

1973). Marx was aware of the tension and mutual dependence between these two levels -- indeed, this is the core of his historical materialism:

> The concrete is concrete because it is a combination of many determinations, ie. a unity of diverse elements. In our thought it therefore appears as a process of synthesis, as a result, and not as a starting point, although it is the real starting point, and therefore, also the starting point of observation and conception (Marx, 1971, p. 34).

Hegel certainly must have recognized that the existent, even as a substantiation of the Idea, must logically precede the Idea. However, Hegel solved this by subsuming the process of reality within the logical process of the mind. As Marx stated: "Hegel fell into the error, therefore, of considering the real as the result of self-co-ordinating, self-absorbed and spontaneously operating thought" (ibid., p.35).

For Marx, reality (the concrete) is both the starting point and the destination of the logical process (the abstract). But, the categories which thought employs to apprehend the concrete must themselves be scrutinized. Political economy takes as its starting point the population. Marx agrees that this appears to be the correct procedure, but that 'on closer consideration it proves to be wrong'. For, population presupposes classes, which presuppose capital and wage-labour, which presuppose money, and so on.[21] Thus, the simplest possible concrete category is itself the result of the logical process (abstraction).

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[21] Here also is the implication of the form/essence inversion for Marx's method. Marx is explaining how it is, in fact, quite reasonable to posit analytical categories, yet wrong to do so. Political economy, for example, locates the creation of surplus-value within circulation because it does not apprehend the essential nature of the labour process, wherein surplus-value is created by labour and appropriated by capital.

This is not simply a minor methodological difference. Marx's choice of categories and his mode of analysis demonstrates his understanding of the historical process. The commodity-form, for example, is definitive of the capitalist mode of production; it cannot exist except as a rudiment in prior social formations, and its existence presupposes the existence of money, which in its turn presupposes capital. Thus the analysis (logical process) of *Capital I* begins with the commodity and procedes through labour and money before reaching capital -- in effect, retracing theoretically what is the real historical process. "To this extent, the course of abstract reasoning, which ascends from the most simple to the complex, corresponds to the actual process of history" (ibid., p. 36).

Using the example of labour, Marx argues that, by its 'very definiteness' as an abstraction, it is only applicable to capitalism. For the ideologues of the bourgeoisie, in contrast, theory is a process of legitimation which deprives the analysis of labour of any historical context -- the category of labour is projected from the present to the past. Bourgeois political economy seeks to discover its categories (labour, exchange, etc.) in all previous social formations. "They may contain these in a developed or crippled or caricatured form, but always essentially different" (ibid., p. 40). The central difference emerges; Marx presents his analysis of capitalism in its historical aspect, its development and movement. By simply assuming, positing as fact, the validity of its categories, political economy remains trapped in an analysis of reified phenomenal forms:

> Classical economy is not interested in elaborating how the various forms came into being, but seeks to reduce them to their unity by means of analysis, because it starts from them as given premises . . . a deficiency of classical political economy is the fact that it does not conceive the basic form of capital, i.e., production designed to appropriate other people's labour, as a

> historical but as a natural form of social production (Marx, 1971 ii, III, p. 500).

Here is the reason, I would argue, behind Marx's exhaustive discussion of the commodity in the opening chapters of *Capital.* The existence of the commodity-form, and its generalization as definitive of capitalism, has as a necessary precondition the existence of categories which follow it in the logical process, but which precede it in the historical process. "Thus in the original transition from money, or value existing in its own right, to capital, there is presupposed an accumulation by the capitalist, which he accomplished before he was a capitalist" (Marx, 1971, p. 107). Once the categories in logic -- things and relations in reality -- have come into being, their preconditions become the consequences of their existence for the practitioners of bourgeois political economy. The ultimate **consequence** of a process of historical development becomes, for uncritical analysis, the **precondition** for that development. Political economy makes the error of inverting cause and effect, of mistaking the existent for the conditions of its genesis. "Bourgeois economists, who consider capital to be an eternal, natural (and not historical) form of production, are always seeking to justify it, in that they portray the conditions of its formation as the conditions of its present realization" (ibid., p. 107).

Hegel's method was ultimately ideological because, in collapsing the logical process into the process of reality as a **unity**, he simply granted the validity of his categories as a realization of the Idea. This consequence of Hegel's method was the 'mystification' that Marx was attempting to set to rights. Political economy ultimately achieves the same end, but by elevating phenomenal forms to the status of an absolute, and by mistaking the categories of a historical political/economic system as eternal forms, having existed in all previous epochs of human society.

In both cases, the consequence is an un-critical,[22] and therefore ideological, apprehension of empirical reality. In Hegel's case, the assumed empirical reality of **essential** forms led to his idealism; in the case of political economy, the assumed essential reality of **phenomenal** forms had, as its consequence, the assumption of empiricism as the singular valid method of political/philosophical enquiry.

Political Economy as Ideology

For Marx, the critique of political economy was directly bound to the normative imperative of the supersession of capitalism. His study of the laws of motion of capital was defined by his interest in discovering the structural linkages which were weakened by the development of capitalism. Of necessity, a critique of political economy, as the 'state of the art' knowledge form, accompanied the explication of the inner relations of capitalism.

Marx's analysis of political economy was also fundamentally concerned with a 'bringing to light' of the inversions in thought which the political economists accomplished, and which were the basis of ideology in this field of social theory. Political economy was ideology because, while correctly identifying the analytical categories, it failed to discern their contradictions; this is the first inversion. As well, political economy made the error of confusing the historically specific with the natural or transhistorical forms; this is the second level at which political economy becomes inverted theoretically. "The categories of bourgeois economy . . . are forms of thought expressing with social validity the conditions and relations of a definite, historically determined mode of production, viz., the production of commodities" (Marx, 1971 i, I, p. 80).

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[22] Perhaps a more appropriate term might be 'limited criticality' in the sense that moral and natural scientific critique are limited by their inability to grasp the historical nature of existential categories. The entire theoretical project which historical materialism creates is specifically to understand social categories in their historical context.

Throughout *Capital*, Marx chastizes political economy for attempting to reify, as natural forms, the categories which could only emerge in the development of capitalism. "The economists do not conceive capital as a relation. They cannot do so without at the same time conceiving it as a historically transitory . . . form of production" (Marx, 1971 ii, III, p. 276).

This is not, however, a deliberate exercise in apologetics. It is a consequence of the method of political economy, as an uncritical positivism, to define capitalism in terms of the phenomenal forms through which it manifests itself. For example, the distance in time and form between the appropriation of surplus-labour in production and the realization of surplus-value in circulation permits political economy to focus upon circulation as the sphere where profit is produced (ibid., p. 482). And the process of circulation itself operates in such a way that "the determination of the value of commodities by the labour-time embodied in them appears to be invalidated as a result of the conversion of values into cost-prices" (ibid., p. 483). Capital thus becomes identified as the cause of profit, rather than as the consequence of the appropriation of surplus-labour.

The misunderstanding of the labour theory of value of value is not restricted to the bourgeois political economists (cf. Weeks, 1981). Engels himself considered the transition to capitalism to be characterized by curiously voluntaristic elements (ibid., p. 23). Profit, as Engels understood it, was generated by a consensus among artisans to accept a lower wage, with merchants being contractors in the arrangement. He also considered the process to be purely economic, a view which was substantially different from that of Marx, who emphasized the importance of extra-economic factors, the role of the state, in particular. Most importantly, Engels held that profit arose in circulation. If this was so, and Weeks makes a powerful argument to that effect, then no less an authority than Engels failed to grasp the substance of the labour theory of value, viz., that the profit of capital derives from the ability, intrinsic to capital, to appropriate unpaid surplus-labour in the production process. Accordingly, it may be argued that Engels did not understand Marx's central 'metaphysical' problematic -- alienation.[23] For, we might consider the substantive moment, the law of value, and the metaphysical moment, alienation, to be complementary elements in the production and reproduction of capitalist relations. Engels, no less than the political economists of the day, was unable to penetrate, in theory, to the essential level of capitalist relations of production.

Again, it must be emphasized (as Marx does frequently) that the inability to explain the essential relations of capitalism is not simply a cognitive error on the part of political economy. Rather, it emanates from inversions within the production process itself. In production:

> the subjective productive forces of labour appear as productive forces of capital . . . . Even in the simple relations of production this inverted relationship necessarily produces certain corresponding inverted conceptions, a transposed consciousness which is further developed by the metamorphoses and modifications of the actual circulation process (Marx, 1971 i, III, p. 45).

Ideological thought is a consequence of a double inversion, the first occurring in the production process itself, in material reality, and the second occurring in the theoretical (ideological) representation, in political economy. In apprehending, for example, production and circulation as a unity, the contradiction of wage labour/capital, ie., the appropriation of surplus-labour, is denied. By identifying value with exchange-value, by portraying them as a unity (rather than as essential and phenomenal forms of the same social relation, the extraction of surplus-value in the labour process), the fact that labour is the source of value is obscured.

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[23] I realize that this is a strong claim. But, if Weeks is correct, then it would logically follow that Engels would have serious problems with the concept of alienation. For it is from the labour theory of value that all things flow, as it were. Alienated objectification is the consequence of labour under circumstances of contradiction/exploitation.

Marxists such as Louis Althusser have argued that the transition to production as the arena in which ideology is generated represents the 'epistemological break' in Marx's works. The existence or non-existence of an epistemological break has been a focus of considerable debate within Marxism. Undoubtedly, there has been an evolution in what Marx considers ideological thought -- the idea that ideology is generated by inversions in the process of capitalist production, and again by the theoretical misapprehension of those inversions (by political economy), is most definitely not the same concept of ideology that Marx employed in his earlier critique of religion and in *The German Ideology.* I do not, however, believe that these versions are necessarily incompatible. In the critique of natural religion, a priesthood arises (the first division of labour) to systematize the fear and reverence for the uncontrollable forces of the natural world. In the labour process of capitalism, the worker is also subject to forces beyond his understanding and control, and the ideological underpinnings of capitalism (e.g., the exchange of equivalents, freedom of competition, fair pay for fair work, etc.) serve to provide intellectual rationale to the capitalist social order.

The transition in Marx's works from a critique of philosophy to a confrontation with the tenets of political economy demonstrates the awareness which emerged through the evolution of his theoretical programme that social change would not be effected through philosophical critique alone. I have demonstrated in this section that, in Marx's time, the intellectuals of the day used theoretical argument to justify an exploitative social order. Marx took upon himself the task of uncovering the essential relations which operated beneath the phenomena which occupied the attentions of the ideologues of capitalism. In doing so, he made a powerful argument that the intellectuals of his day, with their positive social science, were in fact, creating an ideological superstructure which justified the prevailing state of affairs.

The analysis of capitalism which Marx undertook in his later works has provoked the controversy in Marxism regarding the validity of his knowledge claims in the earlier critiques of Hegel and religion. Structuralist Marxists such as Louis Althusser have taken the position that Marxism is a science, that the scientific project of Marxism is to expose the structural weaknesses of capitalism, and that *The German Ideology* and all works before it are non-scientific and, hence, are not 'Marxist'. The philosophical Marxism of the Frankfurt School, in contrast, has emphasized the Hegelian roots of Marx's thought -- even to the extent of claiming that Marx's later works were positivist in method, and subject to critique on those grounds. I would prefer to take a conciliatory position in this controversy. Even in the 'mature' *Capital*, the theme of alienation is a motif which permeates the critique of political economy. The dialectical method (negative dialectics) which Marx developed in his dialogue with the works of Hegel remain the analytical tool that is employed in *Capital*. Nevertheless, there is a 'tension' in *Capital* which provides the grist for the debate between a more idealist approach and a more positive scientific approach. This tension, I would claim, enhances the richness of the work, particularly in the manner in which it has provoked discourse on central issues in social theory (structuralism, the nature of cognition, human agency and free will).

Alienation and the Normative Imperative

As I have claimed throughout the chapter, Marx developed the concept of alienation early in his career: first, as it was expressed in the religious sentiment, and second, as a consequence of actual material practice in the labour process of capitalism. A careful reading of *Capital* demonstrates that the concept is deeply embedded in both Marx's method, as well as being understood by him as the central, substantive contradiction of capitalism.[24] Indeed, Mészáros (1970) argues that the alienation of humans under capitalism is the central normative impulse that informs Marx's work.

In *Reason and Revolution*, Marcuse emphasizes that for both Marx and Hegel, labour and its alienation occupied a position of ontological centrality:

> The concept of labor is not peripheral in Hegel's system, but is the central notion through which he conceives the development of society . . . Hegel describes the mode of integration prevailing in a commodity-producing society in terms that clearly foreshadow Marx's critical approach
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> (Marcuse, 1960, p. 78).

And with regard to alienation:

> For Marx, as for Hegel, the dialectic takes note of the fact that the negation inherent in reality is the 'moving and creative principle'. The dialectic is the 'dialectic of negativity'. . .[25] Man's social practice embodies the negativity as well as its overcoming. The negativity of capitalist society lies in its alienation of labor; the

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[24] It is indeed amazing that Althusser can claim that *Capital* is science and that alienation is 'pre-marxist', particularly insofar as one must assume a thorough reading of *Capital* on his part (cf. *For Marx*). I in no way wish to diminish the contribution of Althusser to the Marxist tradition. Rather, I would rather point to the potency of the preconceptions that a scholar brings to any intellectual debate, even a scholar of Althusser's stature.

[25] The quotation marks in the text denote material which is cited from the *Economic and Philosophic Manuscripts* (p. 77).

> negation of this negativity will come with the abolition of alienated labor (Marcuse, 1955, p. 282).

Hence, the alienation of labour under circumstances of exploitation leads logically (in the sense of the historical development of the proletariat) to the primary goal of an emancipatory political struggle to be the supersession of alienation. Thus, Marx in no way eschewed philosophy in his theoretical programme, and there is a continuity with the work of Hegel which is in no way diminished by the materialism of Marx.[26] Marx's early critique of *Geistesphenomenologie* served to clarify the mystical obscurantism of Hegel. However, the reality of alienation as the 'metaphysical' moment of capitalist production was retained. The critique of capitalism was made necessary by the very fact of alienation in capitalist production. The transition to economic critique in the later works simply affirms an understanding of the nature of human social reality which was already apparent in the early writings -- namely, that alienation and alienated self-consciousness derive from a contradictory material practice:

> What makes it capital before it enters the process so that the latter merely develops its immanent character? The social framework in which it exists. The fact that living labour is confronted by past labour, activity is confronted by the product, man is confronted by things, labour is confronted by its own materialized conditions

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[26] This is in marked contrast to the epistemological presumptions of the Enlightenment philosophes who sought to bring into cultural science the scientific method of the natural sciences. In the decades following Marx's death, possibly the defining text was that of Emile Durkheim -- *The Rules of Sociological Method*. This handbook is a useful read to gain an understanding of the tenets of positivist social science. Social science departments at North American universities today generally exemplify the method of logical positivism -- in the language of German philosophy, **Verstand**, the form of Reason that is capable of discerning only phenomena, not the essential relations that underlie them.

> as alien, independent, self-contained subjects, personifications, in short, as someone else's property (Marx, 1971 ii, III, p. 475).

This conception, which is further developed in the "Fetishism of Commodities" (*Capital I*), points the way to what we might designate 'false consciousness'. In ordinary 'workaday' life, the labourer comes to confront the products of labour as alien objects, as things outside himself.[27] As a consequence of the inversion in the process of production, by which surplus-labour is expropriated, the immediate sensuous apprehension of the world is of a world of things, not relations between humans. This is the same process whereby ideology is generated:

> The characters that stamp products as commodities, and whose establishment is a necessary preliminary to the circulation of commodities, have already acquired the stability of natural, self-understood forms of social life (Marx, 1971 i, 1, p. 80).

While Marx did not systematically expound on the problems of working-class consciousness, this idea of an alienated consciousness, actively produced in a contradictory life practice, has obvious implications for revolutionary praxis. Lenin and Lukács (to focus on two scholars among many) were both concerned with the problem of overcoming the ideology that is produced in the capitalist mode of production; indeed, for them, the supersession of distorted, ideological modes of thought was a precondition of socialist revolution.[28] They both concluded that 'false consciousness' had to be overcome from without; that is to say, by the education of the masses to the extent of enabling them to apprehend their objective interests and in the process, to develop a revolutionary consciousness. As I have indicated, however, for Lenin and Lukács the problem was one of 'imputing' a 'correct' consciousness through instruction by intellectuals. This approach to the development of a working-class consciousness is very much different from the theoretical work of Antonio Gramsci, whom we shall examine in the following chapter.

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[27] This process of 'reification' forms the central problematic of *History and Class Consciousness*. Lukács is seeking to work out the problem of working-class consciousness which is generated by both labouring under conditions of alienation (the extraction of surplus-value) and by living in a world of objects which, although created by labour, achieve a metaphysical status as idols which are divorced from the subjectivity of the working class.

Cultural Science vs. Natural Science

Throughout Marx's theoretical works, it is very difficult to discern any programmatic treatment of epistemology vis-à-vis the disciplines of philosophy, history, and political economy in apposition to what is understood as 'Science'. To put it somewhat differently, Marx was attempting to develop a critical cultural science that was not compromised methodologically (in the sense of being enslaved by the positivism of the natural sciences). In the later years of the 19th century, however, the emerging cultural sciences were embracing positivist method as a means of self-legitimation. Jay suggests that

> with the breakdown of the Hegelian synthesis in the second half of the nineteenth century, a new stress on empirically derived social science had developed alongside the increasing domination of natural science over men's lives. Positivism denied the validity of the traditional idea of reason as **Vernunft**, which it dismissed as metaphysics (Jay, 1973, p. 61).

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[28] cf. Lenin's *What is to be Done?* and Lukács' *History and Class Consciousness*

Marx, throughout his academic career, and against this growing movement to drive critical reason from the field, was refining the tenets of historical materialism; first, through a critique of Hegel's idealism; second, Marx sought to demonstrate that the mode of political and economic organization of societies (including their own self-conceptions) are historically contingent; third, he devoted his later works to exposing the ideological nature of bourgeois political economy, such that:

i) political economy drew its theoretical conclusions by failing to penetrate, in its analysis, to the fundamental relationships of capitalist economy. This failure to grasp the form/essence problematic was not deliberate; it was a consequence of the failure of positivist method and of the power of ideology to obscure the essential relations.

ii) Marx suggests on a number of occasions that there is also a sense of a deliberate obfuscation on the part of the political economists. It is in the interest of the practitioners of political economy to **conceal** the essential relations, because to reveal those relations would be to expose exploitation at work in the process of capitalist production. As Marx comments, this concealment of the true nature of the workings of capitalist economy is "more or less the point of the entire proceeding." [29]

What is less clear is Marx's attitude toward the natural sciences. It is here that I believe we find an ambivalence with regard to science and epistemology. I would argue that Marx was located at a critical juncture in the development of 'cultural' science vs. natural science. At this point in the history, a systematic division between the two, based upon method and epistemological preconceptions, had not yet been made. While I have made an effort to demonstrate that Marx's method was **not** positivist -- indeed, it represented the antithesis of positivism -- the articulation of the fundaments of critical social theory was a generation in the future (e.g., the Frankfurt School of Social Research). To be sure, Marx found a certain purity in the fields of mathematics (where he was a master in his own right), physics, and chemistry.[30] It cannot be reasonably argued that Marx in any significant way considered the natural sciences to be problematic in the sense of being tainted by ideology. To this extent, Marx was very much located philosophically in the Enlightenment, which viewed science and the scientific method as unproblematic in epistemological terms. Certainly, in his later writings (i.e., *The Grundrisse* and *Capital*) Marx took a perspective on science that persists as the dominant paradigm even today -- by this I mean the certitude with which the practitioners of science view their work as being first and foremost neutral, and second, being inevitably and ultimately beneficial to the welfare of the human species. There is finally the self-understanding of science by its practitioners that sees scientific knowledge as incremental and error free, so long as correct method is adhered to.[31] There is a strong sense of the millennial in this equation of science with progress -- the logical consequence (which many scientists passionately hold to) is that science and technology will ultimately usher in the age of peace and plenty. It is perhaps instructive to itemize these elements of the self-understanding of contemporary science, since they will reappear as one of the problematics of the final chapter:

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[29] This component of Marx's conception of ideology suggests that he did, indeed, have a notion of a more positive genesis of ideology as a deliberately produced mode of thought, rather than simply an inverted, negative understanding of the world, an understanding created ultimately by the process of labour operating in the specific conditions of capitalist production. Here, I would differ with Larrain (1983), who contends that the development of a more positive view of the ideological totality did not develop until Antonio Gramsci.

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[30] Biology was not yet established as a natural science discrete unto itself; indeed, there is still a debate in biology between the holistic and reductionist camps. There are biologists today who attempt to understand the natural world in the totality of its interrelationships just as there are those who believe that biology can ultimately be reduced to the same processes and the same language that define physics and chemistry.

[31] Thomas Kuhn, in *The Structure of Scientific Revolutions*, exploded the notion of science as a neutral endeavour which is isolated from social forces, and which progresses by incremental additions to the store of human knowledge.

1. Science is a **neutral** endeavour.
2. Science is **progressive** in its very nature.
3. There is an inherent **objectivity** in scientific inquiry.
4. There is a **teleological** component such that Science will ultimately lead humanity to a golden age.

In his critique of political economy, Marx believed that technology (the forces of production) would expand the possibilities of capitalist production; but, he also believed that this development of all of the potentialities of capitalism would ultimately result in its collapse, as the accumulation of capital rendered the realization of surplus-value ever more difficult (cf. Marx, 1971, p. 132-140).

And for Marx, the application of science and technology (the conquest of nature) would continue to remain unproblematic in the communist society of the future, providing human society with the wealth required to enable the individual to develop his or her full potentialities:

> (The development of science -- especially of the natural sciences and with them of all the others -- is itself once more related to the development of material production.) Agriculture, for example, is a pure application of the science of material metabolism, and the most advantageous way of employing it for the good of society as a whole (ibid., p. 141).[32]

Marx's attitude toward the application of science to the problem of 'conquering nature' is unfortunate, to be sure. But, Marx was expressing nothing more than the prevailing sentiment of his era. However, it would indicate that the problem of emancipating human beings as well as nature must incorporate new theoretical perspectives to which Marx did not have access in his time. It is in this light (the fact that Marx was merely expressing the commonly held views of his era)[33] that theorists such as T. Adorno are somewhat harsh in their condemnation of Marx's putative view that nature is to be wrestled to the ground – the 'ground' being the realm of freedom (cf. his comment in Jay, 1973, p. 57): "Adorno . . . said that Marx wanted to turn the whole world into a giant workhouse."

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[32] Of course, Marx could not have foreseen the direction that agricultural production would take. Were he alive today, one cannot conceive that he would condone the use of herbicides, pesticides, the practice of agricultural monoculture, and the destruction of natural ecosystems -- all in the name of enhanced agricultural production.

Certainly, we would all like to fish in the morning and write poetry in the afternoon. But, it has become clear, in the century following Marx's death, that the conquest of nature that Marx understood as a necessary prerequisite of the development of human freedom in communist society will continue to place the well-being of the biosphere in ever greater jeopardy. To be fair to Marx, his understanding of human freedom was based upon the precept that freedom was an impossibility as long as humans were forced to live in the 'realm of necessity'.

To summarize, I find in Marx a problematic understanding of the relationship of human society to the natural world. His idea of the subjugation of nature by technology is most definitely not universally accepted as an ideal goal today. Although, even in the contemporary era, the idea of a truly revolutionary or emancipatory ecological science remains at the fringe of any debates about the 'environment'. The discussion of the conjuncture of science, technology, and human freedom versus the destruction of the biosphere will constitute the problematic of the final chapter.

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[33] After all, historical materialism logically must find itself representative of an historical era of human society. As such, Marxism will itself be transcended in the 'historical future'.

Conclusion

To this point, my discussion has remained somewhat abstract in considering Marx's theoretical programme as he confronted philosophy and political economy. To make Marx's view of ideology more accessible, I would like to examine a philosophical concept that is central to American liberal democratic theory.

Let us consider the idea of 'freedom' as Marx conceives it in capitalist society. Marx is quite willing to grant the existence of **formal** freedom in capitalism. To that extent, nothing has changed in the century since Marx's death. The industrial 'democracies' of the West enjoy the trappings of formal democracy, insofar as citizens are able to exercise the right to vote in political elections at regular intervals. However, this freedom is illusory. The act of casting a ballot does not allow individuals in society to control their lives in any meaningful way (in the sense of controlling the exercise of **real** political or economic power.[34] The vagaries of capitalist economy dictate the manner in which we live out our lives, depending upon the socio-economic class or stratum into which we have the good or ill fortune to be born and depending upon the manner in which the structural contradictions of capitalism wax and wane. And although it may seem to state the obvious, clearly **real** economic and political power is still held by a relatively small ruling elite.[35] The 'free' competition of the capitalist market is in no way related to to personal or political freedom, the protestations of the ideologues of liberal democracy notwithstanding:

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[34] I should point out that Marx did not make such a claim regarding political life under capitalism. Indeed, Marx saw capitalism as a progressive force which would ultimately confer power upon the proletariat.

[35] Ralph Miliband, in *The State in Capitalist Society*, presents a longitudinal study of the western capitalist nation states. Miliband demonstrates that not only is political/economic power exercised by a small ruling class in the industrial 'democracies', but, more interestingly, the ruling elite tends to be very insular in terms of the recruitment to the elite across generations. In other words, if one is born into the ruling class, one stands an excellent chance of being recruited in the fullness of time. The United States demonstrated the greatest level of cross-generational recruitment from **outside** the 'inner circle', with something in the order of 10 % new recruitment with every new generation.

> Hence the absurdity of considering free competition as being the final development of human liberty, and the negation of free competition as being the negation of individual liberty . . . This kind of individual liberty is thus at the same time the most complete suppression of all individual liberty and total subjugation of individuality to social conditions which take the form of material forces (Marx, 1971, p. 131).

In any case, a thorough and systematic discussion of the operation of ideology in late capitalism is beyond the scope of this paper. In the final chapter, I will discuss the extent to which ideology has permeated even the technological rationalism that Mandel (1977) considers to be the central component of ideology in advanced capitalist society.

The discussion of Marx's theoretical programme has emphasized a number of issues which were central for Marx's aim of the emancipation of humans from domination and exploitation. First, there was fundamental continuity in Marx's method. For Marx, social theory was not a self-sufficing activity (e.g., philosophy) -- it was driven by a political (normative) commitment which was developed early in his theoretical work. The self-alienation of labour was, for Marx, a state of affairs that both could and should be transcended in communism. This idea of transcendence/supersession is one of the most important links between Marx and Hegel's philosophical system; the transcendence of alienation is central to both.

Second, Marx also established a close relationship between the critique of Hegel and the critique of political economy -- both are ideology critique. Marx sees in personal or political freedom, the protestations of the ideologues of liberal democracy notwithstanding:

> Hence the absurdity of considering free competition as being the final development of human liberty, and the negation of free competition as being the negation of individual liberty . . . This kind of individual liberty is thus at the same time the most complete suppression of all individual liberty and total subjugation of individuality to social conditions which take the form of material forces (Marx, 1971, p. 131).

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Hegel the hypostatization of an absolute subject, and therefore the identity of subject and predicate, as well as the inversion of subject/predicate. Hegel manages to reconstruct empirical reality in the process of the mind in such a way as to justify or legitimize what is in fact a contradictory social practice. Marx similarly criticizes British political economy by demonstrating how the bourgeois economists manage to reify the existent, and, only a limited, phenomenal form of the existent. He thus establishes the necessity for ideology critique as a central element for the explication of capitalist economy.

Third, Marx's materialism establishes a positive cultural science. As is the case with all dialectical critique, there are significant positive elements in Marx's critique of Hegel (cf. Marcuse, 1972). From Hegel, Marx retained the ideas of man's self-creation as a process, labour being the realization of man's essence in the act of self-creation, and objectification as loss of the object. Labour was at once individual praxis and social activity -- under conditions of domination and servitude, this objectification resulted in the reification of the world of objects created by human labour. Or, to put it better, reification is the consciousness which is generated through alienated objectification.

Fourth, Marx's method for ideological analysis has critical intent. Negative dialectics would become the fundamental analytical tool in neo-Marxist studies such as those conducted by the Frankfurt School. In most aspects of Marx's critique (whether of Hegel or of political economy), the presentation of ideology as a concept is in a negative sense. It emerges as an expression of a social practice which is inverted or contradictory. The science of political economy is itself representative of real inversions in practice, and ideology can only be overcome in material practice, therefore. By implication, the consciousness which would emerge by and through revolutionary praxis would not be ideological. It is only in occasional asides that Marx suggests that ideology might be understood as part of the greater ideational totality, that is to say, as being subject to scrutiny by analytical tools other than negative dialectics. Antonio Gramsci would focus upon the totality of social consciousness as it is constructed in daily practice as well as in its multifaceted dialogues with past ideological forms.

Fifth, the attempt to establish a positive cultural science was not without its problems. Marx's use of ideology as a conceptual tool was necessarily limited. In his usage, we are restricted to the imperfect and distorted representation, in consciousness, of contradiction in material practice. To be sure, the discussion of fetishism (reified consciousness) in vol. 1 of *Capital* anticipates a more positive dialectic in the sense of developing a theory of working-class consciousness (cf. Lukács, 1985). However, this more or less direct coupling of consciousness to material practice (production) is narrow and incomplete. For, there are a number of other constituents of mass consciousness which form the normative totality, and which must be considered in any critique regarding the possibilities of the development of a revolutionary consciousness. Nevertheless, this conception of ideology represented only a portion of Marx's work. In his earlier theoretical treatises, ideology was also formed by other aspects of existence (natural religion, etc.). Herein lies the tension in Marx that some have interpreted as an 'epistemological break'. There is, I would argue, no significant inconsistency between the idea of a distorted consciousness arising from the struggle with nature (in an earlier historical epoch) and the reified consciousness arising from circumstances of alienated objectification (capitalist production).

Finally, certain problematics challenge the efficacy of the orthodox Marxist project, especially with regard to the contradictory tensions between science and emancipation. With regard to Marx's view of science, there are some very serious problems in the incorporation of Marx's epistemological position vis-à-vis science into an emancipatory political project. For Marx, the natural sciences were politically neutral and would ultimately lead humanity to the domination of nature and the realm of freedom which was based upon that domination. The programmatic premisses of Marx's formulation were to become major sites for theoretical contestation with the rise of post-Marxism, feminism, and Critical Theory. Marcuse (1964) devotes much of *One-Dimensional Man* to developing the idea that science, as a 'neutral' endeavour, begets domination both of man by man and nature by man in any society, capitalist or socialist. For Marcuse, technological rationality inevitably carried with it the domination of nature. In the final chapter, I will return to these critiques of the Enlightenment and positivism which the Frankfurt School carried out. I also intend to explore the possibility of an alternative science which does not carry domination embedded within its precepts.

It has been the task of Western Marxism to elaborate a more positive view of the forms of mass consciousness, taking into account relict forms (eg., religion) which are nevertheless powerful forms of social practice. On this theoretical terrain, Antonio Gramsci has given the most cogent and rich expression of the problems which face revolutionary political praxis. It is to the works of Gramsci that we now turn.

Chapter Three

Antonio Gramsci and the Enrichment of Marxist Social Theory

Introduction

The capitalist socio-economic system of the late 20th century presents a terrain for theoretical analysis which is very much different from that which Karl Marx studied. The development of "ideology" as a theoretical concept has become more problematic under advanced capitalism and its attendant mass culture.

Whereas Marx, in the main, adhered to a more narrow and specific use of the concept -- in *The German Ideology*, and texts preceding it, as an attack upon religion and German idealism, and in *Capital* against the assumptions of political economy -- the development of capitalism in the 20th century has necessitated the concomitant evolution of a broader theoretical conceptualization of ideology. The 'broadening and deepening' of the capitalist economies in the economically advanced countries of the West has been accompanied by the emergence of complex forms of social consciousness and sophisticated institutions to disseminate and reinforce those forms.

After the events of the Russian Revolution, it became clear that a similar political upheaval would not occur in the more developed countries of the West. Russia was, at the time of its revolution, only beginning to emerge from a feudal mode of production. The systematic dissemination of the 'ideas of the ruling class' throughout institutional structures had not begun in any significant way in pre-revolutionary Russia. One of the fundamental contributions to political theory on the part of Antonio Gramsci was an analysis of the extent to which the ruling ideas of Western societies prevented a recurrence of the Russian experience in those countries.

In this context, the works of Antonio Gramsci represent an important and creative development in critical social theory. For Gramsci, it was necessary to identify all of the components of social consciousness in order to advance a realistic revolutionary praxis (a praxis which would incorporate those components, rather than attempt to expunge them). Furthermore, the central concern that informed Gramsci's works, i.e., the mobilization of a revolutionary class, necessarily required a reconceptualization of the the theoretical problem of the state and civil society in the context of revolutionary action.

Gramsci's view of the state and civil society demonstrates convincingly, I believe, that one of his most profound insights into revolutionary praxis was that strategy was very much contingent upon the specific circumstances within a given society. What might be appropriate for a peasant society (Russia) was not necessarily relevant to a society with a developed proletariat and a peasant base (Italy). And revolutionary struggle in the more sophisticated capitalist states of the West required again a different theoretical perspective. Gramsci understood the historical process to be open-ended and of multiple possibilities -- as opposed to the orthodox ('diamat') line that modes of production are self-subversive historical forms whose quasi-Hegelian supersession is a matter of predetermined necessity. "Men make their own history" -- Gramsci understood this just as did Marx.

The problematic of ideology, as it was examined by Gramsci, will form the substantive focus of this chapter. It is fundamentally important to make the point, at the outset, however, that ideology was not a concept that was developed in isolation from Gramsci's other theoretical concerns -- namely, the state and civil society; hegemony, the confluence of ideology/mass consciousness with consent bestowed by the population; revolutionary praxis. For Gramsci, the most significant problem was to synthesize these elements in order to provide a cogent theory of revolution. The fact that this synthesis carries with it many significant contradictions and tensions will be examined.

Also, and as was the case with the discussion of Marx, I will attempt to bring to light Gramsci's view of science. One might expect that, with a conception of ideology that includes many diverse cultural elements, Gramsci may well be equipped with a much more historicist perspective on science than that which Marx brought to his analysis of society. Although Benedetto Croce's 'temporary Marxism' and his lack of perspective on political action render him suspect as a contributor to the Marxist tradition, his influence on Gramsci was of great importance, in this context his anti-positivism, in particular. I will demonstrate that Gramsci understood cultural science and natural science to be guided by the same analytical principles, but with the important provisos that science is first a subjective activity and that its parameters are in a state of continual flux as a function of science's situation within the historical process.

Gramsci's debt to both Hegel and Marx will be highlighted where appropriate; I will attempt to highlight the extent to which Gramsci defended Hegel and a more Hegelian reading of Marx. As well, the appropriation of Gramsci by structuralist Marxism (Louis Althusser, in particular) will be considered as pertinent issues arise, with a discussion of the epistemological and methodological questions which that appropriation raises.

Social Consciousness and Class Consciousness

The Problematic of Ideology: an Overview

I will endeavour, in this overview, to illuminate the problematics which inform Gramsci's work. Generally, I wish to use this overview to establish some of the parameters which will delimit Gramsci's discussion of ideology. First, and most important, I will emphasize whenever appropriate that the lived, practical experience of the masses was, for Gramsci, a powerful component of the genesis of their consciousness; indeed, the everyday activity of the masses was the terrain upon which their consciousness was formed. Second, it is of profound theoretical importance to examine the manner in which Gramsci distinguishes between high ideology and mass consciousness, not to isolate them theoretically, but rather to demonstrate the extent to which they are in flux and tension with one another. Third, Gramsci suggests that a tension remains between Marx's more negative conception of ideology and a conception wherein competing ideologies might battle for supremacy as history unfolds. There is an implicit suggestion that Marxism itself is an ideology, and will be superseded in the future. I will also suggest that Gramsci retains a sense of Marx's negative formulation insofar as he was very much aware of the Kantian phenomena/noumena problematic which had occupied Marx and Hegel. This awareness provides evidence of both theoretical continuity, as well as the suggestion that ideology might well serve to conceal contradiction.

> Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly found, given and transmitted from the past. The tradition of all the dead generations weighs like a nightmare on the brain of the living (Marx, "The Eighteenth Brumaire of Louis Bonaparte").

This tract, written by Marx in 1851, illustrates themes which are central to the works of Antonio Gramsci. In his study of social consciousness, Gramsci recognized that the "tradition of all the dead generations" was of a matter of crucial consideration. The profound importance of religion and folklore for the practical daily experiences of the masses of the people could not be ignored or discounted in any discussion of praxis. Thus, in Gramsci's hands, the concept of 'ideology' acquires a formulation which is extremely rich, in terms of its usefulness for revolutionary praxis. I will argue that Gramsci's theoretical work in the area of social consciousness/class consciousness represents a creative and necessary improvement upon Marx, in light of the dynamic, ever-changing requirements which are placed upon theory by the historical process.

I will not systematically differentiate between 'ideology' and 'false consciousness' in the sense of dividing the discussion of social consciousness into separate sections, especially insofar as such a distinction would be contrary to the spirit of Gramsci's analysis. He considered all components of social consciousness to be multifaceted -- informed by both the residues of prior historical epochs and by daily life practice. As well, the more systematic and sophisticated forms of ideology were, for Gramsci, in a continual state of flux and interaction with the more disarticulated forms of the consciousness of daily life. Nevertheless, Gramsci **did** conceive of a 'high' ideology which permeated the ideological structures of society, in contradistinction to the practical consciousness of the masses.

I do intend, therefore, to make it clear that Gramsci perceived an important theoretical distinction between the 'high' ideology of the ruling class and the everyday consciousness of the mass of the population.[36] Which is not to claim that these two realms of social consciousness are discrete unto themselves -- Gramsci recognized that the ruling ideology was of great practical importance as it informed the consciousness of the masses, and especially as the ruling ideology became totalized throughout society as **hegemony** (that is to say, the conflation of the active consent of the population with the ideological structures of society: Gramsci, 1971, p. 57-58). The extent to which active consent on the part of the working class (that is to say, consent regarding their own oppression) is integral to the maintenance of the ruling class is perhaps one of the most important contributions of Gramsci's theoretical works.

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[36] The works of Lukács are remarkably consonant with Gramsci in many regards. It was this element of 'high' ideology that Lukács analyzed as 'ascribed' consciousness in *History and Class Consciousness.* However, Gramsci was much more concerned with the practical consciousness of the masses, a concern absent in Lukács.

The Ontology of Social Being

Before commencing a discussion of 'Gramsci and Ideology', there is an issue of Theory which must be addressed -- an issue with both ontological and epistemological elements. Specifically, I refer to the Gramscian conception of 'human nature' and its relation to daily life experience in a given historical epoch. From that lived experience derives knowledge as Gramsci understood it.

In the *1844 Manuscripts,* Marx established labour -- practical human activity -- as the essential species' ontology. Although Marx would subsequently deny the concept of a fixed human nature (in the sense that Feuerbach understood it), the self-alienation of man in the labour process remained central to Marx's normative/theoretical commitment. The natural form of human existence is labour in society with other humans, and it is in the labour process that alienation occurs under a coercive production system (viz., capitalism). The *German Ideology* extended this conception of human ontology to the terrain of epistemology. "Consciousness can never be anything else than conscious existence, and the existence of men is their actual life process" (p. 47). But the consciousness of an estranged life activity was, for Marx, necessarily inverted. "If in all ideology men and their circumstances appear upside-down as in a camera obscura, this phenomenon arises . . . from their historical life process" (ibid.).

The "Theses on Feuerbach" emphasized the active, sensuous nature of practice, of the process of daily life. Consciousness is not simply (or exclusively) received or reflected from the objective world. It is constituted by and through practical activity. In these works, we discerned, in the previous chapter, the strong Hegelian impulse in Marx's thought.[37]

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[37] cf., *Reason in History* where "the subjective will also has a substantial life, a reality where it moves in the region of essential being and has the essential itself as the object of its existence" (Hegel 1837, 1985).

This brief review of Marxian ontology/epistemology is especially relevant to Gramsci. Indeed, they demonstrate his philosophical proximity to both Marx and Hegel, as we begin to examine the philosophical bases of Gramsci's world view:

> What is man? What is human nature? . . . Man is to be conceived as an historical bloc of purely individual and subjective elements with which the individual is in an active relationship. To transform the external world, the general system of relations, is to potentiate oneself and to develop oneself . . . it is through the activity of transforming and consciously directing other men that man realises his 'humanity', his 'human nature' (Gramsci, 1971, p. 359-360).

This is an excellent representation of the Gramscian dialectic -- the dynamic subject/object relationship.[38] Humans construct their consciousness in and through their practical activity, within the limitations of historical circumstances. Thus, we find in Gramsci an ontology/epistemology which is neither essentialist nor exclusively voluntarist.

To this point, there are not great difficulties which emerge from a comparison of Marx and Gramsci vis-à-vis the dialectical genesis of consciousness. However, when we examine their respective formulations of ideology, the theoretical differences became somewhat more apparent.

As I have argued elsewhere, Marx generally uses 'ideology' in a very narrow sense;

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[38] Sayer (1983) similarly disposes of the base/superstructure, subject/object problematic by suggesting that we conceive of "a relevant ontology (based) on the category of the social individual acting in historical time" (p. 163).

i.e., to designate thought which conceals or masks contradictions in society.[39] For Marx, one might say that ideology critique is the 'negative side' of his dialectical method. Negative dialectics serve to excavate the reality that is not apparent to the senses (the reality that is obscured by ideology). The positive (phenomenal) elements of knowledge, for the practitioners of positivist science (cultural or natural), are the only elements which have a valid epistemological status. Marcuse is eloquent in his exposition of the fundamental tenets of dialectical logic, as opposed to the formal logic of positivism:

> Dialectical thought starts with the experience that the world is unfree; that is to say, man and nature exist in conditions of alienation, exist as 'other than they are.' Any mode of thought which excludes this contradiction from its logic is a faulty logic (Marcuse, 1960, p. ix).

Gramsci would agree with this statement, just as would Marx. In fact, Gramsci would seem to share with Marx a certain awareness with regard to the meaning of the term 'ideology' in its negative sense. Larrain (1983) makes a convincing case for a transition from a negative conception of 'ideology' in Marx to a more positive understanding in Gramsci. For Marx, ideology was distorted thought which concealed contradictions. Gramsci, however, expanded his use of the concept to the terrain of politics, where competing ideologies (bourgeois vs. proletarian) could do battle. However, I would contend that Gramsci does not abandon entirely the idea of a negative conception of ideology. "Indeed the meaning which the term

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[39] The notion of a true, or positive, class consciousness was argued strenuously by Lenin (*What is to be Done?*). Lukács, as well, holds to a 'pure' proletarian consciousness as a necessary concomitant of socialist revolution. While in no way denying the richness of his conception of 'reification', the world of alienated objects, the impulse to overcome 'false' consciousness is inadequate when confronted with praxis in more complicated revolutionary circumstances. For example, the complex of elements of consciousness which exist in the theology of liberation cannot be adequately dealt with using Lukács' conceptions of class consciousness

"ideology" has assumed in Marxist philosophy implicitly contains a *negative value judgment*'[40] (Gramsci, 1971, p. 37). But, there is also present in Gramsci the acknowledgment that dialectical critique and historical materialism are themselves historically contingent, i.e., that their relevance would disappear with the disappearance of contradiction:

> But even the philosophy of praxis is an expression of historical contradictions . . . If, therefore, it is demonstrated that contradictions will disappear, it is also demonstrated implicitly that the philosophy of praxis too will disappear, or be superseded (ibid., p. 405).

In *The Prison Notebooks*, Gramsci deals with the same problematic that Kant posed with his phenomenon/noumenon duality. He actually goes much further than Marx or Hegel before him in analyzing Kant as an important contributor to the discourse regarding ideology. Gramsci saw a much greater consonance between the power of ideology to distort reality and the Graeco-Christian philosophical tradition of Aristotle and Aquinas. Indeed, he claimed that Kant's 'thing-in-itself' was derived from that perspective. Thus, Gramsci also held to a view of society in which certain elements of knowledge are hidden from the perusal of the masses:

> Accepting the affirmation that our knowledge of things is nothing other than ourselves, our needs and interests, that is that our knowledge is superstructure (or non-definitive philosophy), it is difficult not to think in terms of something real beyond this knowledge . . . in

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[40] My italics.

> the concrete sense of a "relative" ignorance of reality, of something still unknown, which will however be known one day when the "physical" and intellectual instruments of mankind are more perfect (Gramsci, 1971, p. 368).

A significant problem facing my examination of Marxist theory, in general, and the works of Gramsci, in particular, is whether the knowledge of an epoch can be differentiated systematically into ideology (distorted knowledge), on the one hand, and true (or positive) knowledge, on the other. While Marx did not, in his later works especially, explicitly address the problem of ideology and class consciousness, it can be argued that Marx held to the idea of an untainted social consciousness, particularly in the communist society of the future. (cf. Larrain, 1983, p. 228). For example, Marx very much admired the works in political economy of David Ricardo, considering them to be scientific insofar as they were theoretically consonant with the social realities of Ricardo's time. It was only the works of the 'vulgar' economists that Marx criticized as ideology, deliberately or inadvertently justifying the status quo. Gramsci believed that an uncompromised social consciousness was a utopian goal, in the sense of its realization being a matter for future generations, freed from the contradictions of a disjunctive social order:

> In the reign of "freedom" thought and ideas can no longer be born on the terrain of contradictions and the necessity of struggle. At the present time the philosopher -- the philosopher of praxis -- can only make this generic affirmation and can go no further; he cannot escape from the present field of contradictions, he cannot affirm, other than generically, a world without contradictions, without immediately creating a utopia (Gramsci, 1971, p. 405).

Gramsci was fully aware of the methodological, and practical, problems in 'winnowing out' the 'true' elements of a revolutionary consciousness while discarding the non-progressive elements (in the sense of Hegel's historical synthesis). It is to Gramsci's discussion of social consciousness and ideology that we now turn.

Gramsci's Conception of Ideology

Introduction

The Gramscian conception of ideology is an extremely complex theoretical construct to present in a coherent fashion, in no small measure owing to his view of consciousness as a phenomenon of complex determination.

First, I will argue that Gramsci does not consistently, systematically, differentiate between the ideology of the 'high' bourgeois culture and the consciousness of the masses, the peasantry in particular. However, a careful reading of Gramsci's explication of the composites of mass consciousness, in contradistinction to the high culture of the bourgeois ideologues, does demonstrate that he was very much aware of the cultural distance between the ruling ideas of society and the consciousness of the mass of the people. **Second,** I will examine the concept of 'hegemony', which is an expression of the flux and interaction between the high ideology and mass consciousness, on the one hand, as well as an expression of the power of ideology to elicit popular consent for the prevailing state of affairs. **Third,** there is the problem of the epistemological validity of social consciousness/false consciousness. To put it differently, did Gramsci hold that all knowledge in society was problematic in that it was false consciousness or ideological? And for that matter, was historical materialism unproblematic for Gramsci?

Finally, I will attempt to clarify the relationship between ideology and intellectuals in society. I make no apology for the extent to which concepts in one section might inform the discussion in another. It is unavoidable when dealing with Gramsci's works, insofar as a consistent motif in Gramsci is the continual motion and interplay between past, present, and future; between town and country; between high ideology and mass consciousness; and the the conjuncture of all of these elements as they enrich Gramsci's theories of state and civil society, and revolutionary praxis.

Ideology and False Consciousness

Gramsci's systematic examination of social consciousness allows us to differentiate between ideology and false consciousness. I will argue that the ideology of the institutions of society is informed by a content which is very much different from the consciousness of the mass of the population. The interplay between ideology and mass consciousness will facilitate the transition to a discussion of hegemony, Gramsci's conception of the ideational totality of society whereby consent is granted upon the prevailing order of things.

For Gramsci, ideology is a more systematic and institutionalized explanation of society, as opposed to false consciousness, which is generated in daily practice. Indeed, much of Gramsci's theoretical work regarding the genesis of social consciousness differentiates between ideology, on the one hand, and the 'everyday' consciousness of the masses, on the other. The former (ideology) is a much more systematic and systematized form of social consciousness, whereas the consciousness of the masses is rather more diffuse and in a continual state of flux.

As Gramsci puts it -- "philosophy is intellectual order, which neither religion nor common sense can be" (Gramsci, 1971, p. 325). (Religion, in its systematic representation by church intellectuals, is also a component of ideology. The 'religion' which Gramsci is referring to in this quotation is the popular religion of the masses). At this juncture, it is useful to examine Gramsci's treatment of ideology by way of contrast to the conception that 'scientific' Marxism has developed. A fundamental difference between Gramsci and structuralist Marxism is discernible here.

Louis Althusser, for example, apprehends ideology and false consciousness as identical cognitive forms, insofar as ideology 'interpellates' individuals as concrete subjects (Althusser, 1971). This assumption about the nature of social psychology owes much to the Enlightenment, which viewed cognition as passive and reflective of external reality. From this perspective, Althusser has created some difficult theoretical problems for his position:

i) Following Althusser's logic, the falsity of consciousness necessarily becomes an epistemological problem (i.e., false consciousness vs. science). The education of the masses is therefore directed toward the seizure of power when capitalism, its contradictions exposed by science, collapses. Gramsci, on the other hand, understood false consciousness in a much more Hegelian manner -- the 'coming-to-know' and 'coming-to-be' through daily practice under circumstances of oppression and alienation.

ii) Revolutionary praxis (for Marxist structuralism) thus becomes fatalistic and quiescent, awaiting the structural collapse of a capitalist order which is ultimately doomed by its own contradictions.[41]

By contrast, Gramsci understood that the consciousness of the peasantry and the working class was something distinct from (yet informed by) ideology, and, of necessity for revolutionary theory, a matter of theoretical and practical interest. Consciousness is not merely an epiphenomenon constituted by ideological structures, but a dynamic (and diffuse) constituent of social life. The influence of Marx and Hegel is clear in Gramsci's recognition of antecedent cultural contents which are embedded in consciousness:

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[41] The events of the French May of 1968 were to be the ultimate test of this assertion. While France teetered on the brink of revolution, with the students at the barricades and with the French working class coming to their support, the French Communist Party essentially 'fiddled while Paris burned'. Their inability to decide to throw their support behind the students was arguably decisive in the defeat of the uprising. Louis Althusser was one of the chief theoreticians of the Party at that time.

> When one's conception of the world is not critical and coherent but disjointed and episodic, one belongs simultaneously to a multiplicity of mass human groups. The personality is strangely composite -- it contains Stone Age elements and principles of a more advanced science, prejudices from all past phases of history at the local level and intuitions of a future philosophy which will be that of a human race united the world over (Gramsci, 1971, p. 324).

As I mentioned above, Gramsci's theoretical focus on social consciousness was of practical (praxiological) concern. For, it is from the terrain of the existing modes of thought that transcendent modes must emerge. Armed with this rich conception, Gramsci systematically examines the constituent elements of consciousness (Gramsci, 1971, p. 323).

First, all men are philosophers insofar as they possess language. Language itself "is a totality of determined notions and concepts and not just of words grammatically devoid of content." The complexity and potentially critical nature of language thereby points to the potential complexity of a subjects' world-view. "Someone who speaks only dialect, or understands the standard language incompletely, necessarily has an intuition of the world which is more or less limited and provincial" (ibid., p. 325). But, again, Gramsci demonstrates his apprehension of social processes as historical, wherein change not only occurs longitudinally, but where the present is continually shaped by the past:

> The whole of language is a continuous process of metaphor, and the history of semantics is an aspect of the history of culture; language is at the same time a living thing and a museum of fossils of life and civilizations (ibid., p. 450).

Language is thus understood as the ideational matrix in a constant state of flux and change, as opposed to being merely an instrumental, neutral tool. For Gramsci, language was metaphorical, on one hand, and of great importance in establishing a normative totality, in which proletariat and peasantry would be able to communicate in a discourse free of contradiction. It is remarkable the extent to which Gramsci anticipates the 'communicative competence' and 'ideal speech situation' of Jurgen Habermas.

The cognitive landscape which language mediates is **folklore**, the most fragmented form of consciousness. As another component of consciousness "folklore must not be considered an eccentricity . . . , but as something which is very serious and is to be taken seriously" (Gramsci, 1985, p. 191). Folklore embraces popular religion -- the religious world-view of the masses as opposed to the philosophy of the ecclesiastics -- and the range of "superstitions, opinions, ways of seeing things and acting." In that folklore denotes an orientation to practical activity, it must be understood as being the basis for the "birth of a new culture" (ibid., p. 191).[42] Again, we see in Gramsci the understanding that the emergence of the new is necessarily brought forth from the terrain of the existent.

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[42] The renovation of Catholicism in Latin America (i.e., liberation theology) is a vindication of Gramsci's understanding of the importance of so-called 'backward' cultural elements in the ideational totality.

The third constituent of mass consciousness is **common-sense**, or 'philosophical folklore'. Common-sense may be understood as embracing folklore and as including the matter of fact practical consciousness of the masses. It is an un-critical and non-self-reflective world-view which is inherited from the past, as well as being continually recreated and rearticulated in the course of daily life. In this respect, common-sense is a false consciousness because it does not permit a critical apprehension of the world. And yet, common-sense is a requisite component of consciousness, in that an un-problematic knowledge of the world is necessary in order to function in it on a day by day existential basis.[43] Thus, the contradictory nature of consciousness in Gramsci's world view. Consciousness must be, of necessity, functional, but it is compromised as an authentic understanding of the world by its construction under conditions of oppression.

As Eyerman (1981, p. 122) notes, however, "common-sense is continually in shifting tension because the world in which it is formed is continually changing." The tensions to which common-sense is subjected are constantly threatening to 'renovate and make critical' its apprehension of the world. Consequently, there are ever-changing demands placed upon common-sense to produce 'good' sense -- the practical knowledge which is gained through the activity of daily life. Good sense is unproblematized because, by and large, it is functional -- it must 'work' for the actor. As I mentioned earlier, a stock of functional, unproblematical knowledge is necessary to exist in the world. Again, I would stress that this form of knowledge (common-sense/good sense) cannot be conceived of as false in any epistemological sense.[44] It becomes false when, as unproblematized knowledge, it is incapable of either remaining operational (good sense) or remaining coherent as a world-view (common-sense) that is able to deal with the exigencies of daily life in the face of tensions arising from changing historical circumstances.

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[43] I would stress here that falsity is not an epistemological matter, but rather a way of describing an un-critical consciousness as it is constituted in a contradictory social practice.

[44] A short anecdote might serve to illustrate what I mean by the epistemologically unproblematic nature of 'good sense'. Several years ago, I was teaching school in northern Alberta. One evening, I was moose-hunting with a Native elder, and he began to explain the nature of native religion and spirituality as it had existed in his youth,

As I mentioned earlier, Gramsci's interest in mass consciousness (especially of the peasantry) is of a praxiological nature, since the philosophy of praxis is concerned with 'renovating and making critical an already existing activity':

> it is necessary to take as one's starting point what the student already knows and his philosophical experience (having first demonstrated to him precisely that he has such an experience, that he is a "philosopher" without knowing it) (Gramsci, 1971, p. 424).[45]

Again, Gramsci demonstrates that revolutionary praxis must, of necessity, derive from an everyday practice which is contradictory in nature (i.e., carried out under conditions of exploitation and oppression). The sole prerequisite of acquiring the philosophical experience is language; from this foundation, the transition to political

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before the contamination of missionary Christianity. As the evening deepened, I began to feel the sense in which the animals of the forest might bestow their beneficence upon the hunter and grant him success. And at dusk, when the great-horned owl of Minerva flew, there was an almost tangible magic in the air. In no way would I consider this experience -- nor the animism of aboriginal spirituality -- false consciousness.

[45] Gramsci's debt to Hegel (the apprehension of history as a process of continual change, of negation/synthesis/supersession) is clear throughout his writings. The existing world-view is the terrain on which the synthesis occurs (i.e., on which the revolutionary consciousness is formed). Again, this is a profoundly different theoretical formulation from Lenin and Lukács, who claimed that a 'scientific' (Lenin) or an 'imputed' consciousness (Lukács) is a prerequisite of a revolutionary struggle. The old forms of consciousness, for Lenin and Lukács, must be expurgated as a *sine qua non* of revolution. For Gramsci, it is from the old forms, contradictory though they be, that a new and critical consciousness must emerge.

action is possible -- in other words, the conjuncture of theory and practice.[46] This idea of theory which is born from contradiction applies no less to the common man of the working class than to the organic intellectual of that class.

Ideology and Hegemony

While Gramsci did not systematically explore the concept of 'false consciousness', the concept has been employed here to describe the different (but related) strata of mass consciousness -- namely, popular religion, folklore, common sense. Again, I must stress that 'falsity' is not an epistemological verdict; rather, the term is employed to refer to knowledge which is unproblematic and even functional, but which would be superseded in an emancipatory political project.

It is crucial to understand that the forms of the consciousness of the masses are not generated entirely in isolation, endogenously, but rather as a 'conversation' with 'higher' cultural and ideological practices. What is of tremendous importance in this understanding of false consciousness and ideology as multilayered forms of social consciousness in continual interaction through historical time is that the mass of the population is not being duped -- many Marxist structuralists would make that claim. Rather, there is an active consent involved on the part of the masses. The people willingly grant their approval and support to the existing civil and political structures of society. This conjoining of consent and ideology was termed **'hegemony'** by Gramsci.

The fusion of philosophy and religion, of town and country, of organic and traditional intellectuals produces the dominant ideational matrix of hegemony. The concept of hegemony is a rich development in Marxist theory. First, hegemony may be seen to be diffused through the various ideological structures which exist in a society. Again, critical social theory is faced with the problem of hegemony being appropriated by the structuralist formulation, be it Marxist (Althusser's ISAs) or bourgeois (legitimation). From the structuralist perspective, hegemony is transmitted as the *Weltanschauung* of the age by the structures of society, as opposed to the Gramscian understanding that hegemony is generated by consent from below as much as indoctrination from above.

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[46] This perspective on the facility of language as it relates to political action bears a remarkable similarity to the 'communicative competence' and 'ideal speech situations' of Jurgen Habermas.

For Gramsci, hegemony implies a process of active consent, not simply a deception for which the ideological structures are responsible.[47] Of course, the consensus of hegemony can easily break down during periods of political strife in civil society -- at such ruptures, the State is forced to exercise coercive power. Nevertheless, "the spontaneous consent given by the great masses of the population" (ibid., p. 12) is often referred to by Gramsci as a powerful force to contend with, whether the consent is given by the masses or by the organic intellectuals whose role it is to provide the more systematic ideological content of hegemony. Indeed, the power of the institutions of civil society to elicit consent is perhaps Gramsci's greatest contribution to Marxist theory. And it is the construction of a counter-hegemony, with its own organic intellectuals, that is both a prerequisite and a concomitant element in the political struggle against capitalism.

Finally, this comment suggests that hegemony is not, even as the dominant mode of thought, an ideational monolith. Hegemony is actively produced through the mediation of an individual's or a social class's lived experience. The consent which is conferred upon society by the philosopher is very different from that of the peasant or proletarian masses. Hegemony, like common sense, is not written in stone, nor is it an identical experience for all social strata. It is constantly threatened by the tensions generated through a distorted life practice. As hegemony becomes problematized by contradiction, the possibility of the breakdown of social cohesion becomes very real, and the threat of state intervention rises accordingly. Prior to this conjuncture, it will have been the task of a new stratum of organic intellectuals to develop a new hegemony to challenge the old modes of thought. But, for Gramsci, this intellectual challenge is itself born on the terrain of contradiction. The

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[47] The example of the United States is a good one to illustrate the concept of hegemony in contemporary times. The confluence of patriotism, Christianity, and the belief in some nebulous idea of 'democratic freedom' formed the matrix of hegemony during periods of American foreign policy where the most heinous deeds were being visited, by overt and covert American policy, upon peasant populations in the Third World (Vietnam, El Salvador, Nicaragua -- to name only a few). Although pressure to end the war in Vietnam grew with the body count, other adventures in the Third World, costing hundreds of thousands of lives were accepted as part of the righteous defense against the Red Menace.

> philosopher (of praxis) himself, understood both individually and as an entire social group, not only grasps the contradictions, but posits himself as an element of the contradiction and elevates this element to a principle of knowledge and therefore of action (ibid., p. 405).

This perspective is much more of a Hegelian one, and it enables revolutionary praxis to avoid disparaging 'trade union consciousness', the religious sentiment, and the 'idiocy of rural life'. To be sure, praxis which emerges from contradiction is itself contradictory and must, in its own turn, be superseded. An appropriate example in contemporary revolutionary struggles was the emergence of the Theology of Liberation in Third World societies.[48] In countries such as Nicaragua, the support of middle and lower level clerics was crucial to that country's overthrow of the Somoza dictatorship in 1979. However, praxis is left with a problem should it assume that religion itself is a form of ideology/false consciousness. A revolution in consciousness itself would seem to be a necessary future component of the revolutionary programme.[49]

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[48] Many observers, mainly but not exclusively conservative intellectuals, would claim that emancipatory/revolutionary struggles have been rendered obsolete by the end of the Cold War. This suggests that the contradictions (perpetual poverty, economic stagnation) which are inherent to capitalism in the Third World have somehow resolved themselves in the wake of the collapse of the communist states of Eastern Europe. I would suggest that not only is this not the case, but that western capitalism will enter

Social Consciousness/False consciousness

I wish to examine, in this section, the elements of social consciousness which comprise ideology, on the one hand, and false consciousness, on the other; it is the dynamic interaction between all of these elements that make Gramsci's theoretical insight so profoundly important for contemporary Marxist theory. And yet, the problem remains -- is the totality of social consciousness ideological in nature?

Perhaps the most important constituent of social consciousness in Gramsci's time and place was religion. But, the popular religion of the people is not the same religion as that of the church intellectuals. It is the consequence of the 'high' religion being mediated and filtered by the daily life practice of the masses. The demands which daily life places upon common sense are the same that mediate the popular religious apprehension of the world. Furthermore, the religion of the peasantry contains fragments of earlier, pagan religions which have been retained and rearticulated.

Similarly, the high culture is not simply transmitted (in any sense of 'interpellation'

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a period of crisis and decline during the decades to come.

[49] At this juncture, the conception of social change abandons a 'pure' materialist conception of society and acknowledges that change must occur in consciousness, often without a concomitant change in the material conditions of life. This acknowledgment of the multifaceted complexity of society in no way suggests that Marxism is a moribund form of analysis. Indeed, Marx himself remarks in a footnote of vol. I of *Capital* that politics, not economy, might play a predominant role in a social formation.

by Ideological Apparatuses). Gramsci (1985, p. 183) notes that the world of popular songs do not really have meaning to the peasants and that they are not memorized per se, but are reduced to "nursery rhymes that are only helpful for remembering the tune."[50]

The point is, that while mass consciousness is constituted in everyday practice, and in dialogue with past ways of thinking, this daily practice is also informed by more elaborate, sophisticated forms of consciousness. These forms we may properly designate

> "ideology" on condition that the word is used in its highest sense of a conception of the world that is implicitly manifest in art, in law, in economic activity and in all manifestations of individual and collective life (Gramsci, 1971, p. 328).

Philosophy and the high religion are salient elements of ideology in Gramsci's usage (as well as the aforementioned 'higher' forms of social life, i.e., art, law, and economy). These components of ideology are, at least to some extent, transmitted by

> everything which influences or is able to influence public opinion, directly or indirectly, belongs to it (the ideological structure): libraries, schools, associations and clubs of various kinds, even architecture and the layout and names of streets (ibid.).

It is from this aspect of Gramsci's formulation that the structuralist interpretation derives.[51] As Gramsci (1985, p. 389) pointed out, it was (in his time) the press in general that promulgated the hegemonic world-view -- the press was the most dynamic and important conveyor of the dominant ideology.[52] Of course, with the development of new media forms (radio/television/film/computer technology) that have emerged with the evolution of technology in capitalist society, new forms that foster the dissemination of the dominant ideology have developed apace.

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[50] The sense of this comment becomes more clear in a tangible way when one hears peasant children in Latin America, for example, who sing the popular songs of North American culture without in any way being able to understand the content of those songs.

These structures (media, educational institutions, the state, the family) became for Althusser (1971) the Ideological State Apparatuses. But Althusser missed the sense of the Gramscian dialectic. For Gramsci, as for Marx, it is practice which mediates the relation between the active, knowing subject and the world of objects. In contrast, Althusser conceives of the ISAs as constituting the subject, plain and simple; the idea of the constitution of consciousness is for more complex and multilayered for Gramsci. First (from Gramsci's perspective), ideology is articulated by the subject in such a way as to be useful; i.e., it produces 'good sense' vis-à-vis the subjects' life practice (a practice that is not necessarily 'known' to ideology). Second, the ISAs themselves are the reified objects which are produced by an alienated social practice (cf., Marx, *Capital 1* - 1.4 and Lukács, *History and Class Consciousness*).

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[51] There is also a difficulty with regard to Gramsci's formulation of State and Civil Society. Generally speaking, Gramsci adheres to a concept which maintains a distinct separation between the two. However, there are points where Gramsci introduces a certain ambiguity regarding the discreteness of them (Gramsci, p. 261). Here, he seems to conflate the two: "civil society is also part of the state, indeed is the state itself." Perry Anderson suggests that Althusser has adopted this version of Gramsci in his work. Anderson's critique of Gramsci points to the complexity of the problem more than to Gramsci's shortcomings as a social theorist.

[52] Of course, the structures of hegemony change with the development of capitalist institutions. For Marcuse (1964), the media have an even more pervasive role regarding the dominant ideology and its transmission. John Thompson, in *Ideology and Modern Culture* (1992), focusses exclusively on the media as the mode of ideological purveyance. As an aside, it is interesting how Thompson manages to avoid the structuralist trap in making his claims.

This is, I would argue, very close to the conception of ideology that Marx employed. That is to say, Marx saw ideology as an insular form of consciousness, a more systematic and coherent world-view (ie., philosophy), rather than as a totality which embraced all forms of consciousness in society.[53] Ideology, in this sense, is closely tied to class interests and especially to the interests of the ruling class. "The ideas of the ruling class are in every epoch the ruling ideas . . . the ruling ideas are nothing more than the ideal expression of the dominant material relationships" (Marx, 1970, p. 64). Of course, it could well be argued (contra Larrain, 1983) that this statement is in itself suggestive of a seminal conception of ideology as a more positive representation of the ideational totality. If the 'ideas of the ruling class' form a significant part of the ideational totality, and if they are by their very nature ideological, then Marx would seem to be laying the foundation for a more totalistic view of social consciousness (and ideology). The problem remains however -- does ideology in this context have validity as a 'truth claim'? In Larrain's (1983) discussion of Marx's conception of ideology, he makes the compelling point that while the 'ideas of the ruling class' might be ideological in nature, this does not render them false in an epistemological sense. The ruling ideas simply express the reality of the prevailing state of affairs.

Yet, the problem of the epistemological validity of social consciousness (as opposed to the high ideology) remains. As I mentioned earlier, Gramsci did not view the consciousness of the masses as 'false' unless it became confronted with insoluble contradictions. And even then, the revolutionary struggle would be fought on the terrain of contradiction, even the struggle of ideas. This is, I would argue, the central problematic of Gramsci's historicism -- the fact that ideas may well be false from the perspective of 'correct' revolutionary praxis; and yet, it is precisely from those 'false' ideas that a theory of political action must be developed. I am not suggesting that Gramsci was any sort of ethical relativist; rather, ideas must be judged on the basis of their historical genesis and relevance to political struggle in a given time and place.

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[53] In this sense, I agree with Larrain (1983). Marx, in his conception of ideology, understands distorted knowledge as being a product of 'higher' forms of intellectual endeavour. The consciousness of the masses is not compromised, therefore, since the large mass of the population (in Marx's time) were illiterate; the higher intellectual products (philosophy, political economy) were not accessible to them, *ipso facto*. But, Marx did not concern himself with the problematic of a distorted mass consciousness even though he laid the theoretical foundations with his discussion of "The Fetishism of Commodities."

There is no doubt that Marxist theory regarding ideology has evolved since Marx. However, and to restate the point, the change in the Marxist conception of ideology is very much a function of the changing conditions of capitalist society. The wider literacy of the mass of the population, as well as the development of new forms of the dissemination of information, has driven theory to adapt to the idea of ideology being embedded in the totality, rather than existing in the more ethereal realms of the production/construction of consciousness by the intellectual elite.

To conclude this section, it is worthwhile to point out that contemporary theorists in the field of ideology critique in mass capitalism, e.g., Noam Chomsky, hold precisely to this conception of two 'layers' of ideology. In the film *Manufacturing Consent*, Chomsky points out that an elite group of the small minority of individuals who achieve a university education are responsible for maintaining the ideological bases of capitalism; the mass of the population is 'kept in line' by mind-numbing popular culture.[54]

Ideology and Intellectuals

In Gramsci's time, the stratification of society into social classes was responsible for the differentiation of qualitatively discrete forms of consciousness.[55] The consciousness of the masses is an assemblage of different constituents and it differs from that of the intellectuals, who articulate the 'pure' ideological forms. Gramsci refers to those who represent ruling class interests as organic intellectuals. It is their function to elaborate and justify the prevailing material relations of production. Clearly, however, Gramsci does not view the organic intellectuals as deriving from a relationship of immediate correspondence to the material forms of the economic base of capitalism. Rather, "the relationship between intellectuals and the world of production . . . is, in varying degrees, 'mediated' by the whole fabric of society and by the complex of superstructures" (Gramsci, 1971, p. 12).

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[54] Chomsky provides exhaustive documentation for his claims regarding the deliberate lies and subterfuge which underlie the maintenance of American ideology. While he makes very compelling arguments for some of his case studies, there is more than a suggestion of a conspiracy theory which suggests that the capitalist elites deliberately act as they do in order to maintain the status quo.

The organic intellectuals generate the philosophy which informs and 'is implicitly manifest in art, in law, in economic activity'. But, as with the forms of mass consciousness, the intellectual consciousness is a composite of new and prior elements. The art, law, and economic activity which ideology permeates themselves have roots in earlier socio-cultural orders. "The philosophy of an age . . . is a process of combination of all these elements" (ibid., p. 345).

The ideology which is dominant under capitalism is not simply a reflection of capitalist relations, therefore. Like the forms of mass consciousness, it too is articulated in tension with real, extant relations, and in conversation with past social and cultural forms.

A further distinction which Gramsci makes divides the ideologists into two categories. While the organic intellectuals are representatives of the dominant class, the traditional intellectuals are repositories of older systems of thought. "The most typical of these categories of intellectuals is that of the ecclesiastics" (ibid.,

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[55] We might well argue that this proposition held equally for Marx's time as well as the contemporary era of capitalist society.

p. 7). Of course, their own genesis was once in an organic relationship to the landed aristocracy. Thus, there is an amalgam of ideological forms, even on the terrain of 'high' ideology. The older forms of ideology have become incorporated into the dominant modes of knowledge of the era. Furthermore, Gramsci realized that at a revolutionary conjuncture, the support of the traditional intellectuals would be of crucial importance to the success of the emergence of a new hegemony and a new historical bloc. As the success of an emergent hegemony became apparent, significant numbers of the 'old' order of philosophers would join forces with the new world view.

Gramsci had great respect for the power of this (traditional) intellectual group. He understood that a revolutionary praxis could not only not ignore religion, but that it must emerge from the terrain of the religious world-view. Again, the distance from Lenin and Lukács, who were convinced of the necessity of a 'pure' proletarian consciousness. Gramsci was fully aware that an authentic praxis could not simply wish away the spontaneous consciousness that it encounters. Rather, praxis must incorporate the existing ideational totality.

Conclusion

To summarize Gramsci's conception of consciousness and its social determination: Gramsci's work provides a dimension of extraordinary theoretical wealth to the Marxist tradition. First, he understood that the consciousness of the world is generated/mediated by the practical daily activity of the subject. Common sense and folklore are the ways of making sense of the world as they are articulated in tension with a world of contradictions. Gramsci presents these concepts as they exist in the present, and as they converse with more archaic forms of consciousness. As well, the promise of a better future (the religious sentiment) injects a sense of the millennial into the consciousness of daily life. Second, consciousness is continually constructed and reconstructed in tension with previous forms of thought, chief among which is folklore, the range of 'superstitions, opinions, ways of seeing things and acting' that are relics from the past rearticulated by the exigencies of the present. Third, the consciousness of the masses is developed in 'conversation' with the ruling ideology and ideological structures.[56] The popular religion of the masses, for example, is a composite of folklore, common sense, and pagan beliefs; and it is articulated in a dialectical relationship with the high religion and its ideologists. Fourth, the 'pure' ideological forms do not simply reflect or derive from the dominant material relations. They are, rather, expressive of the entire cultural matrix in which the dominant material relations are located. The combination of material forces with the religion and philosophy of an historical age ('historical bloc') are themselves developed in tension with the relics of the past and the possibilities of the future. Finally, the extent to which members of society actively grant consent to what may well be conditions of exploitation and oppression indicates the power of hegemony, a fact that was of crucial importance to Gramsci's exposition of revolutionary praxis. The concept of hegemony, wherein consent is conferred upon even a contradictory state of affairs is one of Gramsci's most important contributions to theory. This suggests the idea of ideology being totalized throughout the ideational fabric of society. In expanding the concept to the broader social consciousness, ideologies become material forces which battle for dominance both prior to and during a revolutionary rupture. Following the logic of the supersession of ideologies, even historical materialism becomes historically contingent.

But the fundamental question is whether ideology/false consciousness is epistemologically problematic or not. Does ideology occupy one epistemological zone, with good sense/common sense occupying a different, unproblematic zone? Is the entire ideational totality suspect or not? Gramsci does not give us a satisfactory answer – directly. Rather, he suggests that what is functional (good sense) or what is productive in terms of advancing emancipatory revolutionary projects is valid knowledge in an historical epoch. By this device, he escapes the 'black hole' of ethical relativism by suggesting that knowledge is valid if it advances the cause of human freedom.

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[56] As opposed to Althusser's interpellation/determination by an Ideological State Apparatus.

The reading of Gramsci is fraught with danger, owing to the circumstances under which he worked. Interpretation is also problematic, with a wide spectrum of theorists, each with their own theoretical agenda, occupying the field. Nevertheless, I believe that it is not difficult to find theoretical continuity with Marx and Hegel in Gramsci's works. This is of importance if one's reading of Gramsci is based upon a more Hegelian Marxist interpretation, as is the case in my own understanding of his works.

To recapitulate these constituents of social consciousness and hegemony in such a cursory fashion is to partly lose the sense of the complexity of Gramsci's formulation. Nevertheless, it is a useful heuristic tool, so long as we do not lose sight of the fact that the determination of consciousness, in Gramsci's dialectic, is a multidimensional process, operating both across and within historical time.

Hegemony and Revolutionary Praxis

The following section of the paper will address the problematic of revolutionary praxis, which is necessarily consequent to the discussion of the theoretical problems of ideology and social consciousness. It is my position that Marx's praxis was not inspired by a teleological view of history (as some interpretations contend) – certainly, Gramsci shares the idea that men do not make their history 'just as they please'. They make history in conditions which are unique and specific to a given historical epoch. Any discussion of praxis and revolutionary consciousness must account for, and integrate, antecedent cultural and economic forms. In other words, the complexity and composite nature of forms of consciousness and economic practice in a social order have a specificity and uniqueness in any society that demands an ongoing reformulation in the face of the historical process.

For Gramsci, the discussion of the various elements of consciousness and ideology was not intended as an exclusively academic exercise (although it did permit him to elaborate theoretically the concept of hegemony). First and foremost, Gramsci was a revolutionary, and his theoretical concepts were intimately bound with the problems that praxis was confronted with in his life experience.

Hegemony designates the confluence of the different constituents of ideology and consciousness in civil society -- and the process of active consent that is present on both the part of ideologist and of the masses. Logically and practically, revolutionary praxis must emerge from the hegemony of the prevailing social order. For the philosopher of praxis, who 'posits himself as an element of the contradiction', the struggle is to establish a counter-hegemony, a new theoretical system which is nevertheless based on the old system, while at the same moment challenging the old system. For the masses,

> the philosophy of praxis, as superseding the existing mode of thinking and existing concrete thought . . . must be (first of all) a criticism of 'common-sense', basing itself initially, however, on common-sense in order to demonstrate that "everyone" is a philosopher and that it is not a question of introducing from scratch a scientific form of thought into everyone's individual life but of renovating and making "critical" an already existing activity (Gramsci, 1971, p. 330).

Gramsci's discussion of the philosophy of praxis, from the perspective of both intellectuals and the masses, is an affirmation of the Hegelian and Marxian dialectics. There is the sense of supersession/preservation contained in the same historical moment, the *Aufhebung* of both historical subject and object through praxis. The human subject transforms himself, ridding himself of outdated ideologies. The real, sensuous world or

> structure, ceases to be an external force which crushes man, assimilates him to itself and makes him passive; and is transformed into a means of freedom, an instrument to create a new ethico-political form and a source of new initiatives (ibid., p. 367).

The question of the historical subject is somewhat more problematic. Gramsci does not accept the Hegelian conception of absolute Spirit. Rather, he sees the proletariat (as did Marx) as the vehicle of the historical process, albeit not to the extent of Lukács' metaphysics. But Gramsci does not hold to a vision of 'pure' proletarian revolution. A revolution, to be successful, must assimilate other potential allies in society; in the case of Italy, this was most notably the peasantry.[57] The same need of an alliance between urban proletariat and peasantry was recognized and championed by Leon Trotsky in Russia. In Trotsky's view, this alliance afforded the only possibility of destroying the old regime. Indeed, Trotsky was the first to use the term 'hegemony' to describe the coalition of revolutionary forces. From Gramsci's perspective (as well as Trotsky's), hegemony, ideological and economic, must be exercised by the proletariat, but not to the extent of using force against allies (ibid., p. 168).[58]

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[57] In his later writings, Marx did acknowledge the potential role of the peasantry in countries such as Russia (cf. his "Letter to Vera Sassoulich" in D. McLellan *Karl Marx – Selected Writings*).

The philosophical concept of reconciliation demonstrates further differences between Gramsci, Marx, and Hegel. For Hegel, reconciliation was the return of alienated Spirit to itself at the terminus of world history. Marx saw the transcendence of alienation and exploitation (contradiction) in the labour process as marking the end of prehistory and the beginning of human history:

> Communism as the positive transcendence of private property as human self-estrangement, and therefore as the real appropriation of the human essence by and for man . . . is the genuine resolution of the conflict between man and nature (Marx, 1974, p. 90).

This exerpt from the *1844 Manuscripts* suggests that communism is 'genuine' reconciliation. However, by the time of *Capital* (vol.3), Marx cautions that man's struggle with nature will not vanish with communism, and that freedom must perforce be based on this necessity. Gramsci, on the other hand, claims that praxis which is based on necessity (contradiction) is itself contradictory. Praxis which is born of contradictions must itself be superseded in the realm of freedom (Gramsci, 1971, p. 405). Gramsci's idea of 'free' thought and action is thus more closely related to the early Marx, in which a true reconciliation is possible as a utopia -- in future time. For, if Marx apprehended 'necessity' as perforce contradictory, it would follow that an authentic human consciousness is unattainable in the here and now. Gramsci acknowledges this, to the extent of a prescience of the lessened importance of material forces in the society of the future:

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[58] The collectivization of Soviet agriculture is a poignant example. This process signified a watershed in Russian history; it represented the final victory of Stalin's vision of the transition to communism, and the defeat of the erstwhile allies of Trotsky.

> It is also worth saying that the passage from necessity to freedom takes place through the society of men and not through nature. . . One can go so far as to affirm that, whereas the whole system of the philosophy of praxis may fall away in a unified world, many idealist conceptions, or at least certain aspects of them which are utopian during the reign of necessity, could become "truth" after the passage (ibid., p. 407).

There is a further difference between praxis in Gramsci and Marx which follows from this. Marx's revolutionary programme was to usher in the age of human freedom, the birth of human history. As such, it has been elevated to the status of a science through the codification of Marxism. Gramsci, however, explicitly acknowledges (1971, p. 404) that the philosophy of praxis is as historically contingent as previous philosophical systems, in that it is an element in the contradiction of capitalism. The supersession of capitalism also contains within its logic the supersession of Marxism. And not only that -- the philosophy of praxis must be continually refashioned and reformulated in the face of the historical process to be able to adequately grasp reality, and to change reality through revolutionary action.

Gramsci's Historicism and his Conceptualization of Science

I have demonstrated in the preceding discussion of ideology that the criterion by which Gramsci evaluated thought and knowledge was based upon their efficacy in the immediate political environment in which they were located. Knowledge claims were valid to the extent to which they promoted an emancipatory political programme. In this section, I wish to address Gramsci's understanding of Science with two goals in mind: first, the question regarding Gramsci's view of the epistemological status of science must be addressed. Second, what was Gramsci's perspective on the relation between man and nature? If one poses a unity of man and nature, then the domination of nature by man is equivalent to the domination of one human by another.

Gramsci's 'absolute historicism' derived from a "totally anthropocentric epistemology which virtually reduced the natural sciences to a variant of the cultural sciences" (Jay, 1984, p. 170). Indeed, Gramsci viewed the natural sciences to be historically contingent, just as were the cultural sciences. For Marx, science (natural science) was epistemologically unproblematic -- much less so for Gramsci:

> The scientist-experimenter is also a worker, not a pure thinker, and his thought is continually controlled by practice and vice versa, until there is formed the perfect unity of theory and practice (Gramsci, 1971, p. 446).

But the critique of Marx's conception of the epistemological status of science was made with the recognition that Marx had been undertaking his theoretical works in an earlier era in the development of theory. In Marx's time, a distinction had not yet been made between natural science and cultural science. The practitioners of a nascent cultural science in the 19th century tended toward the positivist method of the natural sciences. Auguste Comte was perhaps the leading proponent of the view that the method of natural science should be transferred 'holus-bolus' to the new discipline of sociology. Against this trend were Marx and Hegel, with their anti-positivist understanding of history, who lay the foundations for the development of a critical cultural science as opposed to a 'sociology' whose tenets were based upon the natural scientific method of positivism and formal logic.

In the Western Marxist tradition of the early 20th century, it was Antonio Gramsci who carried the historicist logic to its ultimate conclusion. The knowledge of an historical epoch was, for Gramsci, contingent. There did not exist a 'tribunal of Reason' wherein all historical social formations could be judged according to the same criteria. Every era, indeed every country at a moment in historical time, must be evaluated by criteria specific and relevant to their time and place. This insight, however, was not a lapse into a form of ethical relativism. Rather, Gramsci -- consonant with his understanding of the dynamic nature of social consciousness -- focussed upon the element of human subjectivity in all endeavours and in the active construction of consciousness:

> Objective always means "humanly objective" which can be held to correspond exactly to "historically subjective": in other words, objective would mean "historically subjective" . . . There exists therefore a struggle for objectivity (to free oneself from partial and fallacious ideologies) and this struggle is the same as the struggle for the cultural unification of the human race (ibid., p. 445).

What Gramsci seems to be saying is that valid truth claims may be made, but only in a utopian future, where contradiction (the realm of necessity) has disappeared, and where the human species has finally been united in a normative totality.

The second part of the problematic which I posed at the outset of this section was Gramsci's theoretical orientation in the man/nature duality (or unity). This question is of critical importance with regard to evaluating the usefulness of a theorist's position vis-à-vis the inclusion of the domination of nature -- as well as the question of 'science as ideology' -- in an emancipatory political project. Before excavating any comments which Gramsci might have made regarding man's relation to nature, it is incumbent upon the reader, I would maintain, to recall that for Marx and the first generation of Western Marxists, human freedom could be contemplated only with the transcendence of the realm of necessity. Unfortunately, this transcendence was often seen as the equivalent of the 'conquest of nature'. Gramsci, writing in a prison cell during the production of his mature theoretical works, was isolated by forty years from the growth of an environmental movement in the advanced capitalist countries of the West. Other theoretical groups, notably the Frankfurt School, did undertake a critique of the precepts underlying the conquest of nature at approximately the same time as the end of Gramsci's life. The Frankfurt School, however, was singular in its critique of the Enlightenment during the early decades of the 20th century.

Having made a prior apology in anticipation of Gramsci's position regarding man and nature, what is to be discovered regarding his views? In contrast to Marx, whose concept of nature, particularly as exemplified in later works such as *The Grundrisse*, was one of confrontation with the other, Gramsci makes only scattered references to the conquest of nature -- for example, (ibid., p. 358-360). Nevertheless, his many theoretical excursions into the nature of valid knowledge claims on the terrain of necessity as opposed to a utopian future lead one perforce to the conclusion that Gramsci too was of the opinion that suffering and privation must be eliminated before a normative totality would be possible. Again, the position that the elimination of human suffering would be a possibility only in a utopian future is demonstrated by Gramsci's interest in American theories of industrial organization such as Taylorism and Fordism.

Gramsci's interest in these theories of industrial organization and mass production using machine technology presents a serious contradiction with regard to his historicist understanding of the contingent location of science in any given social order. The presumption that the conditions of human freedom must be based upon a mass-production economy -- albeit under the control of social democracy -- has the unfortunate result of locating Gramsci with Marx in the desire to complete the

Enlightenment project of the domination of nature as a precondition to human freedom.[59]

Even in contemporary social theory, and to be more specific -- critical social theory, serious ambiguity remains regarding the consequences of using the technology of capitalism to form the basis of socialist democracy and freedom. Outhwaite (1987) discusses the philosophies of Herbert Marcuse and Jurgen Habermas regarding their attitudes toward science and technology. As I will argue in the concluding chapter, even a Critical Theorist of Marcuse's stature was extremely ambiguous with regard to his view of the dialogue between mankind and nature. Habermas has an even more *laissez passer* attitude toward science. In *Knowledge and Human Interests*, Habermas develops the triad of instrumental reason -- hermeneutic reason -- critical reason; however, he draws a distinction between the method of cultural science (critical reason) and the method of natural science by accepting more or less uncritically the validity of empirical method in the natural sciences (instrumental reason). Thus, Gramsci held an even more critical view of the location of science in society, acknowledging as he did the contingent nature of science and scientific theory -- for Gramsci, even natural science was not exempt from the critique of positivism. Marcuse, as I shall argue, comes very close to acknowledging the historicity of science, but ultimately he declines the temptation that Gramsci found to be self-evident.

I would argue strenuously that any critique of Gramsci (or Marx) on the basis of their putative disdain for nature must be understood in the context in which their theoretical works found their genesis. For Marx, the terrain whence his analysis derives is the beginning of large-scale industrial capitalism. In the case of Gramsci, beyond his theoretical works, he was concerned with uniting a fragmented industrial proletariat in Italy, as well as dealing with the problem of a peasantry which was, by its nature, wary of social upheaval. What I intend is not an exercise in apologetics, but rather to situate each theorist in the time and place which gave unique texture to their works.

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[59] This concept (i.e., the domination of nature) will be dealt with extensively in the concluding chapter.

Conclusion

Gramsci was undeniably located in the Marxist theoretical and revolutionary tradition. This does not mean, however, that he understood Marxism to be a body of received truths -- indeed, his works demonstrate otherwise. While Marx was not centrally concerned with the question of ideology and class consciousness, he did consistently distinguish between ideology and science, especially in his later works. Gramsci does not, choosing rather to view thought and consciousness as a totality which is constructed through a dialectic of complex determination.

Consciousness was, for Gramsci, a composite. The tension between mind and practical-spiritual existence is the dialectic of the historical present. As well, consciousness confronts the historical consciousness, relics from earlier social formations. For Gramsci, this understanding of the bases of social consciousness was the indespensible theoretical act to create the linkage of theory with revolutionary praxis.

Yet, Gramsci does not fall back to a relational perspective (à la Mannheim), nor does he accept the structuralist position that ideology is the necessary objective bond of any social order. Hegemony, albeit complexly determined, is still tied to ruling-class interests. Ideology and false consciousness will ultimately disappear in a society of free thought and action, even though that free society may well exist only in a utopian future.

The consequence of opposing ideology to science is seen in the works of Lenin and Lukács (among others). Their demand for a pure proletarian consciousness is unable to accomodate all of the disparate elements of consciousness that Gramsci understood so well. Lenin accepted the premise that history attains to higher socio-economic forms through revolutionary praxis. But it is in Gramsci that we discern the understanding of supersession/preservation in the same dialectical moment. Thus, Gramsci was able to accept a contradictory proletarian consciousness; this was anathema to Lenin.

It is Gramsci's understanding that praxis must emerge from a daily life practice that is contradictory and distorted that provides such rich implications for revolutionary praxis. Particularly in the decades of the 1960s, 70s, and 80s, the melding together of disparate groups in Third World societies -- each with their unique social histories -- enabled anti-imperialist revolutionary movements to challenge the world hegemony of capitalist political economy, especially the counter-revolution which was waged with a peculiar viciousness by the United States. The common front movements of middle-class students, urban proletariat, and rural peasantry would have been unthinkable to the revolutionary theory which both informed and emerged from the Russian experience. The collapse of the Berlin Wall has perhaps given the impression that anti-capitalist, anti-imperialist struggles have somehow become relics of a different historical era. I would argue that this is a fallacious intellectual construct, generated by the ideologues of advanced capitalism. For the contradictions that neo-colonialism has created in the underdeveloped regions of the planet have not vanished simply as a consequence of the collapse of the dictatorships of Eastern Europe. The relevance of Gramsci remains, in the face of exploitation and political repression in the countries which have for decades been held in the thrall of the neo-colonialism of the West.

The efficacy of Gramsci in the contemporary discourse regarding the destruction of the global ecosystem is somewhat dubious. Gramsci certainly believed that natural science did not occupy any sort of privileged epistemological status; indeed, he collapsed natural science into cultural science to the extent that natural science became located in Gramsci's 'absolute historicism'. Implicitly, we find in Gramsci not only the proposition that natural science is contingent upon the historical epoch in which it is practiced -- even more important, there is the implication that natural science, in order to advance valid knowledge claims, must divest itself of pretensions to being a provider of absolute positive knowledge. This is quite a claim, and would be vigourously disputed by the practitioners of natural science, particularly the more 'pure' disciplines of chemistry and theoretical physics. And yet, developments in 20th century science (e.g., Heisenberg's uncertainty principal in quantum nuclear physics) have shown that a re-evaluation of the claims, by the practitioners of 'high' science (theoretical physics), that theirs is a similarly pure epistemological endeavour, is an ongoing requirement. Gramsci, a relentless anti-positivist, would agree.

However, at the end of Gramsci's life, a group of philosophers had coalesced around a view of society which was to become called 'Critical Theory'. The works of the Frankfurt School of Social Research were to confront directly the precepts of the Enlightenment which had resulted in the exalted position of Science in society, both in cultural discourse and in the striving for technological domination of humans and of nature. Sixty years after their original works, the critique of mass society and its attendant technological rationalism remains relevant to the state of affairs in which advanced capitalist society (and the global ecosystem) now finds itself.

General Comments:

The Contribution to Theory of Marx and Gramsci

Marxism and Theories of Ideology

My purpose in excavating Marx's conception of ideology was twofold. Most important, the survey of Marx's writings with the intention of discovering the manner in which he conceptualized the problematic, as well as attempting to clarify his method, was very much linked to the problem of the different interpretations of Marx throughout the history of Western Marxism. To explain my intent with this in mind, the study of Marx's works served an indispensable service in my own self-clarification of the theoretical issues.

It is altogether too clear that 20th century Marxism, representing the broad spectrum of Marxist theorists, whose ideas consist of positions from an un-dialectical structuralism to post-modernist deconstructionism, has read Marx selectively in such a manner as to reinforce certain interpretations, while debunking other perspectives which might be inimical to their own. My own reading of Marx is perhaps guilty of this very same complaint, namely, in my own case of bringing a Hegelian reading of Marx's works to bear on my own search for self-clarification with regard to Marx's method. Be that as it may, I make no apology for this; it is impossible to dissociate one's conception of the world from the attempts that one makes to impose some sense upon 'historical sociology'.

The second goal of my exposition of Marx's method was to provide a document which might enable students who were interested in the genesis of critical theory to explore a readable thesis about Marx without subjecting themselves to the rigours of 'mining' his collected works.

Of course, the fundamental aim of any study of critical dialectics is to assess the potential efficacy of the author's perspectives with regard to contemporary problematics in social theory. After all, the terminus of critical social theory is social change -- the transcendence of a social order characterized by exploitation and domination, by a dysfunctional popular culture, and by a dangerously disordered political culture. In the case of this thesis, my objective was first to evaluate the possible relevance of Karl Marx to social problems which have arisen a century after his death, and which he could not have foreseen. As I indicated in the course of the discussion of Marx's works, many of his writings seem inadequate when measured against what are now considered significant systemic disorders of late capitalism; in this paper, one of the central problematics was the formulation of a conception of ideology which may be used as a tool to evaluate the 'ideas of the ruling class' in the contemporary era of late capitalism. In addition, the discourse has been directed toward a discussion of the domination of nature by science and technology, and the theoretical perspectives which Marx and Gramsci have to offer on this issue. I have indicated the deficiencies in Marx vis-à-vis his conception of mankind's relationship to nature.

Nevertheless, I also pointed out that there was much in Marx that was relevant to contemporary issues. He laid the foundation for a cultural science which was based upon dialectical critique rather than the positivist method and formal logic which came to permeate the humanities in Anglo-American theoretical discourse. Indeed, this intrusion of 'scientific method' into cultural science in North America is not an accident. It is a consequence of an attempt to understand human society **without** critical intent. In a very important sense, there is an ideological component implicit in the positivism of North American social science departments; again, the search for truth is the search for only the **phenomenal** forms of reality. Marx taught us that there is a deeper reality which must be excavated by dialectical enquiry. And indeed, others have carried on the tradition in the 20th century. Marcuse (1964, 1965) has argued that even the 'positive' freedoms that we take for granted (ballot-box democracy, freedom of speech, etc.) are, in fact, new forms of repression that have emerged under advanced capitalism.

The works of Antonio Gramsci were deliberately selected in order to provide a theoretical perspective which acknowledges the importance of the structures of capitalist society, but which nevertheless focusses upon the lived experiences of the members of a social order. The dynamic construction of social consciousness is systematically explored by Gramsci; but we must not forget nor diminish Gramsci's debt to Marx, who in his studies of the genesis of surplus value, found a metaphysical moment -- namely, the alienated objectification of labour in circumstances of exploitation. In Marx's "Fetishism of Commodities", we find the distorted, reified consciousness that is the consequence of alienated labour, the same 'false consciousness' that occupied so much of Gramsci's studies.

With regard to the problematic of mankind and nature, Gramsci's historicism reaches even into the realm of the natural sciences. Although the Enlightenment self-understanding of science is predominant even today (with its inherent telos; its contribution to progress and ultimately human freedom; its essentially neutral, value-free method; etc.), Gramsci placed the natural sciences onto the terrain of human endeavour, which was continually in flux and change, and which could not be eternalized through an apotheosis of its method and assumptions. The developments in 20th century science have to a significant extent vindicated Gramsci; the Uncertainty Principle in quantum nuclear physics is but one example of the instability of eternal principles in the High Church of science -- theoretical physics. As I shall point out in the next chapter, the surety with which science understands the world has been eroded in the discipline of biology, as well.

At this juncture, it is incumbent upon the author to respond to an unspoken criticism; what is the rationale for limiting the theoretical survey of Marxism to only Marx and Gramsci in the discussion of ideology and science? The answer is quite simply that the richness of the Western Marxist tradition prevents a systematic review of the pantheon of Marxist theorists' conceptions of ideology and science. There are many excellent surveys which the student may be referred to (e.g., Martin Jay -- *Marxism and Totality*). In the following chapter, I intend to explore more fully the problematic of the domination of nature, and the ideological presumptions of science, biology in particular. As part of this discussion, I will include neo-Marxist critiques of science and mankind's domination of nature. The theorists of the Frankfurt School will form the core of this critique. Additionally, more contemporary perspectives on the relationship between man and nature will be examined. These perspectives will generally reflect a more radical understanding of the looming ecological crisis.

The heuristic intent of the final chapter is to provide a less rigorous, abstract discussion of, e.g., the reconciliation of human nature and external nature, although the theoretical arguments will not be diminished. Rather, it is my intent to provide a document which is accessible to students of biology and potential teachers of biology who have, for whatever reason, come to have doubts about the received truths, regarding science and the natural world, that are embedded in the disciplines germane to the scientific discourse.

I will attempt, in the final chapter, to relate the earlier Marxist concepts (Marx and Gramsci) of ideology to the current state of affairs in contemporary advanced capitalist society. In particular, Gramsci's historicist understanding of science in the ideational totality will be relevant. However, I will also ask the reader to make, to a certain extent, a 'leap of faith' with regard to what conception or definition of ideology is appropriate to the changed historical circumstances of late capitalism. While I have argued that Marx and Gramsci remain relevant to issues which occupy late 20th century political discourse, in the interest of providing clarity, I would choose to adopt a more accessible view of ideology. John Thompson (1990) summarily deals with the question of ideology by simply offering a one line definition: "ideas in the service of power." This notion is actually not theoretically removed in any significant way from Marx, who, in *The German Ideology*, stated that in every epoch the 'ideas of the ruling class are the ruling ideas'.

The efficacy of conjoining this more accessible definition of ideology to the discussion of the final chapter will become clear when dealing with texts such as Aronowitz' *Science as Power* and Richard Lewontin's *Biology as Ideology*. This is not to say that I shall abandon Marx -- indeed, the critique of the Enlightenment, carried out by Horkheimer, Adorno, and Marcuse is directly indebted to the tradition of negative dialectics which flow from Hegel through Marx to Critical Theory. Perhaps the most significant contribution of Critical Theory may be the extent to which its practitioners understand the closure of the normative totality under advanced capitalism -- the manner in which the ideological foundations of capitalism have come to permeate all aspects of culture and discourse, including the scientific discourse. The opening lines of *One-Dimensional Man* still resonate thirty years after they were penned: "A comfortable, smooth, reasonable, democratic unfreedom prevails in advanced industrial civilization, a token of technical progress."

Chapter Four

Ideology, Science, and Educational Practice

Introduction

The focus of this chapter will consist of three related elements. The first section will be comprised of an examination of the pedagogical dynamics involved in the instruction of science at the secondary/post-secondary levels. It is my aim to provide, in this synthesis, a document which might assist aspiring instructors of science, biology in particular, to examine some of the problematics which could arise in the course of their training, and yet to which no satisfactory resolution has been provided.

In the second section, I will examine the possibility of a science that does **not** seek to conquer nature. This investigation will examine the conquest of nature, the critique of which was undertaken by (*inter alia*) the Frankfurt School of Social Research. The possibility of a reconciliation of humanity with the natural world will form the substantive problematic of this section.

To conclude, I will deal with concepts such as the idea of the inherent ideological nature of science, as well as the integration of science into the institutions of late capitalism wherein political and economic power reside.

Part One: Biology and the Critique of Educational Discourse

First, I will undertake a critique of the educational discourse which is generated by the curriculum specifications and instructional practice in the discipline of biology -- specifically, ecology -- in secondary and post-secondary educational institutions. One important element that will emerge from this discussion will be a study of the manner in which ecology, properly understood as a totality which may well defy a complete dissection by science, has been co-opted by an instrumental environmentalism. An analysis of various curricular materials will serve to highlight the claim that what passes for 'ecology' in educational discourse is in fact either a sterile exposition of the 'web of life', or is an unapologetic exercise in dissecting the elements of an ecosystem -- the better to control them.[60] I have selected both required and optional materials from the secondary Biology 10-20-30 curricula (Alberta Education, 1984). In addition, I will include a discussion of the treatment of ecology at the university level, to the extent that there are insights to be gained from this exercise.

Second, the ecological consequences of the unbridled exploitation of nature which derive from this perspective will be examined. The fact that we, as a species, are in significant danger of rendering the planet uninhabitable for humans is self-evident to many; however, in order to lend authority to this assertion, the perspectives of workers in the field of ecology will be scrutinized. A number of unavoidable questions will arise from this exercise. Paramount among them will be the notable lack of radical ecological critique in secondary/post-secondary educational discourse.

Part Two: Science and the Domination of Nature

This section will address the domination of nature which began with the emergence of sedentary societies, and which rapidly accelerated as capitalism emerged from feudal society. I intend to focus primarily upon the critique of the Enlightenment which was carried out by Horkheimer, Adorno, and Marcuse. In this critique, we search for the philosophical bases that allowed human society, as it became organized under a regime of the 'dictatorship of technology', to exploit nature -- and in doing so, to engage in the exploitation of human by human, of one class by another, and of woman by man. As a logical corollary to the critique of the Enlightenment, I will examine the possibility of reconciling human society and technology with organic nature.

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[60] The curricular materials, with regard to high school biology, which I will examine will be those of the old Biology 10-20-30 curriculum specifications. During the last three years, the high school Science curriculum has undergone a measure of change -- to my knowledge, the materials which deal with the instruction of ecology have not changed substantively. In any case, the old curriculum continues to be employed in many rural teaching situations.

Part Three: Science as Ideology

The final section of the chapter will focus upon the extent to which biology, and the natural sciences generally, are permeated by ideology. I will argue that the foundation of this conception of biology is the set of assumptions which form the dominant paradigm in the self-understanding of natural science, and which serve to justify the maintenance of class and status stratification in advanced capitalist society. One of the most invidious aspects of biological theory is to be found in the field of genetics, where concepts such as the genetic inheritance of intelligence -- a problematic concept, as I shall argue -- have been requisitioned by the ideologues of disciplines ranging from biology to sociology in order to justify the perpetuation of a grossly undemocratic social order. As well, I will discuss the reconciliation of nature from the points of view of philosophy and political economy.

Defining the Problematic

> And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth. So God created man in his own image, in the image of God created he him; male and female created he them. And God blessed them, and God said unto them, Be

> fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth
>
> (Genesis I: 26, 27, 28).

> 'Ecology' has always meant social ecology: the conviction that the very concept of dominating nature stems from the domination of human by human, indeed, of women by men, of the young by their elders, of one ethnic group by another, of society by the state, of the individual by bureaucracy, as well as one economic class by another or a colonized people by a colonial power. And as long as hierarchy persists, as long as domination organizes humanity around a system of elites, the project of dominating nature will continue to exist and inevitably lead our planet to ecological extinction
>
> (Bookchin, 1980, p. 78).

These two tracts are representative of perhaps the most extremely antithetical views of humanity's relationship to the natural world.[61] The quotation from the Bible represents the 'quickening' in terms of the **philosophical** expression of man's self-understanding of the **actual** process of human social evolution which began with the emergence of humanity from a neolithic hunter-gatherer mode of existence to societies based upon agriculture and animal husbandry. The mandate to exploit nature for human purposes has been embedded in the Judeo-Christian collective consciousness for a span of time beginning centuries prior to the commencement of the current millennium. In order to illustrate the antiquity of the will to dominate nature, I will employ the arguments of the early members of the Frankfurt School (Horkheimer and Adorno) who find some of the 'root metaphors' of Western society in the mythology of Greek civilization. I will also refer to the dialectic of Enlightenment of Horkheimer, Adorno, and Marcuse who trace this theme in Western philosophy through the Enlightenment to the presumptions of contemporary science and society.

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[61] I employ the terms 'nature' and 'natural world' to designate the biosphere as an entity which is something existing apart from human society. There are a number of complications with this designation. First, Marx (in a number of unfortunate comments) as well as the philosophers of the Enlightenment use this dichotomy to place nature in the role of adversary vis-à-vis human society. I am willing to grant this tension between society and nature only to the extent that by 'society', we understand that we are referring to technologically driven social forms which emerged in the West with the rise of industrial capitalism. I would be inclined to understand other forms of social organization and levels of technological development (such as the native North Americans prior to the European onslaught) as existing as part of nature rather than separate from it.

The compulsion to control and dominate nature has continued apace with the refinement of the technological forces necessary to accomplish the task. At least in the West,[62] the intensive exploitation of nature did not begin, with the exception of very localized areas, until the advent of industrial capitalism in the 17th century. Even then, ecological dislocation remained relatively localized until the 20th century. During the span of a mere one hundred years, technology (in the main, the technology of advanced capitalism) has brought the Earth to the point of no-return with regard to the cumulative effects of industrial toxins, and the exploitation of plant and animal species in a wide range of planetary ecosystems. This assertion is not merely a casual warning about polluting the environment. During the last twenty-five years, the field of ecology has witnessed the growth of a cohort of ecologists who have come to alarming conclusions regarding the effects of the unbridled exploitation of nature. In order to contextualize my critique of educational curricula, and of the presumptions of science generally, I will accept, as more or less unproblematic, the assertion that a (potentially) catastrophic ecological disaster looms -- perhaps not in the next twenty years or even in the next century; I am prepared to accept the argument, however, that at some juncture humanity will cross the threshold of no-return regarding the degradation of the biosphere. To emphasize that this perspective is based upon serious work in the field of ecology, I cite briefly the conclusions of two ecologists (among many others).

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[62] In China, water diversion and other engineering projects had been accomplished on a relatively massive scale thousands of years before endeavours in any way approaching the magnitude of these efforts were attempted in western countries. I would argue that there is both a quantitative and qualitative difference between these projects and the pressures which advanced capitalism have placed upon the global ecosystem.

Commoner (1971) has focussed on the effects of the discharge of industrial pollutants into aquatic ecosystems. One example of his studies deals with the pollution, with heavy metals, of Lake Erie. His conclusion is that, for all intents and purposes, Lake Erie has become a dead lake. Of course, there are large concentrations of industry in the area which accelerate the process, but it is not unreasonable to extrapolate this destruction of an aquatic ecosystem to, ultimately, the oceans of the world. Ecosystems are, by nature, homeostatic. In other words, they tend to seek the level of systemic stability which is appropriate to their environment. As Commoner demonstrates, however, there is a limit to which ecosystems are self-cleansing. And there is certainly no data available for the effects of pollution on the worlds oceans, looking ahead perhaps decades if not hundreds of years.

With regard to the depletion of resources, Rifkin (1980) argues that humanity will reach a point during the next century when mineral resources, timber, and fossil fuels have reached the point of exhaustion. I would argue that this claim is problematic, since the Club of Rome (Meadows et. al., 1972) was promoting this same point of view twenty-five years ago, and it would seem that their dire predictions, which were based upon computer models and faulty assumptions regarding technological progress, were somewhat premature. In any case, there was an implicit neo-Malthusian tone to their work which, as is so often the case, shifted the issue of ecological collapse to the Third World. Nevertheless, it is certainly not unreasonable to argue that at some future time, technology will have pillaged the global environment to the extent that repair is not possible.

The plunder of Mother Earth also carries with it, as Bookchin suggests, much more; the domination of female by male, the domination of less-developed countries by advanced capitalism, and the domination of the less powerful socio-economic strata by the elites of capitalism. It is of essential importance to realize that Science is not a neutral endeavour, and that with its partner -- technology -- is subject to the use, by economic and political elites, in such a way as to maintain their position of hegemony. The impending ecological disaster not only calls to account the bases and rationales of advanced industrial society, but also points to the human imperative of developing a qualitatively different paradigm for ecology as an 'art/science'. Ecology must incorporate an aesthetic appreciation of humankind's integral location as an element among many in the global ecosystem -- as opposed to the instrumental view of nature which exhorts technological society to stand apart from, and astride, the natural world. Indeed, Marcuse (1964, *inter alia*) makes a compelling argument that all modes of science and technology must be grounded on a qualitatively different foundation if humanity is to find freedom in coexistence with nature.

Insofar as advanced industrial society continues to render the planet ever more uninhabitable, it would stand to reason that from an early age, there is something lacking in the education of our children. Otherwise, one would assume -- reasonably -- that social/political movements demanding a different relationship with nature would arise spontaneously in an effort to ensure that we do not 'soil our nests' irrevocably.[63] That such movements have remained marginalized bespeaks the ideological hold of the notion of technocratic rationality and the millennial promise of Science. That the educational system does not generate a discourse which challenges this technocratic rationality serves as an indictment for its role as a site of ideological reproduction.

We must question the nature of a pedagogical discourse that does not generate a critical consciousness in the new generation. In consequence, the first task of this paper will be an examination of contemporary pedagogical practice with regard to issues concerning the interaction of society with nature. As Crosby, Stills, and Nash advised us some twenty-five years ago: "teach your children well." The question thus becomes -- what (and why) are we **not** teaching our children?

Science and Pedagogical Discourse

Introduction: The Development of the Method of Science and the Evolution of the Biological Paradigm

In neolithic (aboriginal) cultures that have persisted into contemporary times, there is a virtually universal motif which sets these cultures apart from industrial societies. That motif is the profound understanding of the interrelatedness of all aspects of the natural world. This understanding is not simply the intuitive perception that the elements of an ecosystem exist in complex relationships (e.g., predator/prey interactions; population cycles; seasonal migrations; etc.). It is also the implicit acknowledgment, embedded in the spirituality of the culture, that humans are an intrinsic element of nature. To label this animistic spirituality 'religion' is to fail to understand the extent to which this spiritual immanence permeates the entire life and world-view of aboriginal cultures.

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[63] One might be accused of a certain naivete with regard to cherishing the notion of democratic movements existing outside of conventional 'ballot-box democracy'. There are, however, precedents in contemporary history. The massive opposition to the Vietnam War was at least significantly responsible for the extrication of the American military (although much of the opposition was admittedly based upon body counts, not opposition on moral grounds).

The emergence of sedentary societies sundered the intimate connection, the unity, between mankind and nature. The concomitant process to this evolution in social organization was the emergence of definite class structures (Marx's original sin), as well as systematic forms of religious practice. Indeed, the rise of organized religion, particularly the three dominant Western religions (Judaism, Christianity, Islam), effectively served to sever mankind's spiritual connection to nature by removing spirituality, from the existential immediacy of life, to the realm of the abstract unknowable. The application of ever more efficient technologies, and with this process, the technological rationalization of advanced industrial society, completed the project of the "disenchantment of the world", to cite a notable term of Weber. For Horkheimer and Adorno in the *Dialectic of Enlightenment*, the loss of the immanence of human spirituality within nature is the inevitable outcome of the domination of nature: "The subjective spirit which cancels the animation of nature can master a despiritualized nature only by imitating its rigidity and despiritualizing itself in return" (p. 57).

Thus, we can point to the end of the hunter-gatherer mode of existence as marking the division of mankind's relation to the natural world into two distinct cognitive modes -- the instrumental and the spiritual.[64] No longer would nature be intuitively understood in holistic terms, with humans forming an intrinsic element of the totality.

Of course, as I mentioned in an earlier note (# 62), only in regions of the world which were disparate in time and space did large-scale civilizations emerge that sought to remodel the natural world. In the East, I referred to China with its massive engineering projects. The civilizations of the Levant, Egypt in particular, undertook vast efforts whereby nature was moulded to the human will (or, rather, to the will of the ruling classes). The great empires of Greece, Rome, and Islam took their places in the ascent of man. In the Americas, empires arose in South and Central America, Mexico, and the Mississippi valley. These civilizations in the New World would not contribute to the rise of Western civilization, however. And yet, these sophisticated cultures and empires were relatively ephemeral (with the exception of Egypt). From Greece and the empire of Islam, many works of philosophy and science were preserved that became integrated into the cultures of Western Europe as it emerged from the Dark Ages. With the Renaissance, and the emergence of the age of Enlightenment, there began a codification of the precepts of science and the method of scientific enquiry. The natural world was no longer a mysterious force which was the source of myth. Nature would henceforth be subject to the scrutiny of the emerging scientific method in order to uncover its secrets.

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[64] As I alluded in an earlier footnote (# 44), in aboriginal cultures, even the matter of fact instrumentality of daily life was imbued with spiritual significance.

The last 400 years have witnessed the process of the unification of each of the natural scientific disciplines. The mathematics of Galileo provide the first systematizition of that discipline.[65] It is instructive to note that even in Galileo's time, science was not a strictly objective exercise. Mathematics provided the means for the development of the technology of navigation (perhaps the single most important reason that Europe colonized significant areas of the world, rather than experiencing a different outcome [and a different history]). Chemistry and physics followed as the scientific method became integral to the unification of these disciplines.

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[65] In Chapter One of *Dialectic of Enlightenment*, Horkheimer and Adorno lament the transformation of the world of myth into the world of facticity. The mathematics of Galileo play their part in driving philosophy from human discourse. There is no longer any doubt that positive science provides the answers to questions about the natural world.

In the classrooms of contemporary secondary and post-secondary education, the scientific method of Francis Bacon is still universally understood as the valid path to developing an understanding of the natural world: first, the scientist-experimenter gathers data; a hypothesis is then posited; an experiment is designed to verify the hypothesis; should the parameters of the hypothesis be confirmed by the experiment, a theory is formulated. After independent replication of the experiment by other workers, the theory is then accepted as a valid knowledge-claim. This process has become ritualized as constituting the practice of science. With the increasing extent to which science has permeated the discourse regarding the natural world (and society), 'science' has in some measure, and unfortunately most often in school classrooms, degenerated into an uncritical exercise of gathering the aggregate collection of facts pertaining to the natural world.[66]

In Chapter Two, I enumerated the elements by which Science understands itself and justifies itself in epistemological terms. Francis Bacon was one of several Enlightenment scientist-philosophers who contributed to this paradigm of natural scientific inquiry. Johannes Kepler, in his *Apologia*, laid down two of the central foundations of scientific inquiry; viz.,

> i) an explanatory link between theoretical progress and practical progress
>
> ii) the claim that theoretical progress provided an ever more accurate and complete portrayal of the natural world (in other words, the inherent telos of science)

And Decartes provided the objective certainty which science claims for itself:

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[66] As an anecdotal example of this claim, some ten years ago, I was a member of a class which was being instructed in the instruction of science. As an exercise, the question was posed -- what is Science? The virtually unanimous answer was just as I indicated: the collection of facts that we 'know' about the world. When I responded that science was an activity whereby humans sought to impose intellectual order upon nature, there was a bewildered silence in the classroom.

"Certainty derived from reflection on ordinary experience is the dominant feature of the Cartesian system" (Clarke, p. 14). This is an admittedly cavalier outline of the manner in which often very different philosophical perspectives entered into a conjuncture which we designate collectively as the "Enlightenment." The purpose of this essay is not to present a history of the Enlightenment; I wish to cover the essentials only. The intellectual sources and the evolution of the Enlightenment have been the grist for many volumes of historical works.

Biology, as a discrete discipline in the natural sciences, was the last of the disciplines to achieve a distinct cohesion as a unique paradigm. Before examining biology and pedagogical practice, it is useful to sketch out the salients of the biological paradigm as it currently exists. Having relegated the animistic intuition of ecology to the realms of mythology and anthropology, biology set out to assume its proper place in the disciplines of positivist natural science. Sub-disciplines such as biochemistry and genetics have achieved the greatest stature insofar as they approximate the purely 'scientific' method of physics and chemistry. There are, however, many sub-disciplines such as field biology, evolution, and ecology which defy reduction.[67]

Biology, and especially sub-disciplines such as ecology, have proven somewhat intractable to this impulse. For there is a competing contingent in the biological community which insists upon retaining a holistic perspective vis-à-vis biological and ecological processes and interactions. Indeed, this is an irresistible perspective, in that the totality of interactions within an ecosystem is comprised of such a complex of both biotic and abiotic components. Above, I mentioned the works of a number of ecologists (Rifkin and Commoner, among others) who might be termed 'radical', since they directly link industrial society with environmental collapse. The reason that I employ the term 'radical' is that they have both the expertise and the temerity to couple their insights into environmental problems with a commentary on the prevailing distribution of social and economic power, and to point to the extent to which science and technology have become integral components of the ruling ideology. It is no accident that their works are marginalized in the contemporary ecological discourse, a discourse which seeks the technological fix to the ruptures caused by technology. Ecologists such as Commoner understand that virtually no ecosystem is reducible simply to the sum of its components and interactions; it is my own view that an ultimate 'unified field theory' for ecology is unattainable -- Nature itself resists reduction.

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[67] The reduction of biological processes (or, for that matter, social processes) is the terminus of the goal of method in the biological sciences. To be able to depict reality in the mathematical mode is to confer absolute legitimacy upon the discourse.

It is in this context that we can begin to understand that even the so-called 'holistic' ecologists cannot exorcise the impulse to understand nature instrumentally. For most ecologists (e.g., Ricklefs, 1973), the strongest urge is to fragment the discipline of ecology into its component parts (evolutionary biology, field biology, biochemistry, energy and nutrient cycles, etc.). Dissecting ecology into its constituents allows the scientist to develop mathematical models, make predictions, and so on. In this way, so the ecologists hope, a variation or disruption of one element in the system may be used to predict the consequences for the larger system.[68] The consequence of this reductionist trend even within the holistic group points to the desire to attain an instrumental understanding of an ecosystem -- the better to control and dominate it. Thus, the ecosystem is compartmentalized into biotic and abiotic components: the **abiotic** (physical) factors include climatic zone, soil types, aquatic/terrestrial environment, and the various chemical cycles (water, carbon, nitrogen). The **biotic** factors are predator/prey relationships, interactions both within and between species, population structures, community composition, and so on.

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[68] It is my opinion, as well as that of many other ecologists, that ecosystems -- particularly the most complex systems such as tropical rainforests -- are fundamentally irreducible to a set of interrelated variables which are, in principle, subject to the same rules of experimental predictability as are physical and chemical systems.

The reduction of holism to an instrumental exercise in the context of these factors is expressed by viewing the ecosystem primarily from the point of view of the cycling of energy and nutrients. Solar energy powers the system by providing the primary producers with energy to transform inorganic chemicals into living tissue (i.e., photosynthesis). The standard representation of the ecosystem (in High School biology texts) is presented in graphic form as a triangle wherein the primary producers support primary consumers (herbivores) who are in turn consumed by the highest level, the carnivores. The multidimensional aspect of biotic and abiotic interactions is generally depicted as a maze of interconnecting lines which designate relationships.

This is admittedly a very brief overview of the assumptions which are implicit in High School biology and ecology. Nevertheless, one is able to discern that the representation of the complexity of the natural world is both sterile and static. Further, as I will demonstrate, the consequences to ecosystems which suffer disruption by human activity (pollution, strip mining, logging, etc.) are dealt with in a very cursory fashion. Unfortunately, it is this representation of ecology (the exclusively instrumental mode) which has come to dominate the discourse in educational curricula.

Biology and Pedagogical Practice

The "General Objectives for Science Education" (Alberta Education, p. 2) are in accord with the preceding overview of the current paradigm of biology and science generally. The objectives as stated in the curriculum guide may be summarized as follows (I will indicate, in parentheses, the area of philosophical or ethical discourse which is accepted implicitly and uncritically):

i) There is an emphasis on the importance of the scientific method

(epistemology)

ii) The importance of the student's assimilation of scientific knowledge is stressed **(science as a collection of facts)**

iii) The student is pointed toward the practical value of science education with a view of a vocation as a practitioner of science (**'science' as instrumental reason;**[69] **science as a benefactor of society**)

Finally, and most importantly I would argue, there is an uncritical acceptance of prevailing attitudes toward science. Notably lacking among the General Objectives are discussions of the history of science, ethics as a mode of discourse within and about science, and any suggestion that a critique of the epistemological assumptions of science is a valid field of inquiry.

To be fair, the Curriculum Guide also states that there is a need to understand the environment, and to appreciate the role of science and technology in a broader social context. The initial enthusiasm that a science teacher -- or an educator of science teachers -- might experience is unfortunately tempered by the realization that this so-called "attitudes" component of the curriculum composes only a ten percent designation, and that this attitudes formation component is optional (ibid., p. 5).

The "General Goals for Biology 10-20-30" (ibid., p. 17-19) reflect the objective of pedagogical discourse in biology to provide an instrumental understanding of nature. For Biology 20 (where the instruction of ecology is most emphasized), the stated objectives are "to develop understandings of the interactions and interrelationships between biotic and abiotic factors within communities, ecosystems, and biomes; to understand the principles of genetics; to recognize why there is a great diversity among organisms." Additionally, the attitudinal objective for Biology 20 is "to examine society's impact on the biosphere."

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[69] When I use the term 'instrumental', I am referring to a mode of apprehension of the world which derives its self-understanding from positivism as a method -- a method which effectively removes epistemology from its discourse. 'Instrumental' reason, in my usage, derives from the triad which Habermas posits in *Knowledge and Human Interests*, i.e., the triad of instrumental reason -- hermeneutic reason -- critical reason.

To this point, I have briefly discussed the underlying assumptions of scientific inquiry, particularly as they pertain to secondary science education. And with the presentation of the goals and objectives for High School biology, I have endeavoured to demonstrate that these objectives remain imbued with an instrumental understanding of the natural world. Now, this is not necessarily an invidious enterprise. After all, if humans are to live in harmony with nature, we must first understand it. But, as I shall argue later, the instrumental mode -- when emphasized to the exclusion of the ethical -- carries within it the implicit and inevitable domination of nature, and the concomitant domination of humans by other humans. Before engaging this problematic, however, let us examine the actual curricular materials as they relate to the instruction of secondary and post-secondary biology.

The required text for Biology 20, wherein ecology and evolution are studied, is *Biology: Living Systems* (Oram, 1980). It is instructive to examine this text in some detail. Oram makes it clear that the manner in which science approaches nature distinguishes it from other areas of human endeavour (e.g., art, music, history) (ibid., p. 24). Oram claims that the objectivity of the scientific method is the basis of this discreteness. The subject matter of this textbook includes four chapters dealing with ecology as well as six chapters on genetics, evolution, and zoological systematics. This material is designed for presentation in the instrumental mode which leaves no room for critical thought. The material is pretty much 'state of the art', and it is presented at a level which is appropriate to High School students. It is only in relation to the discussion of pollution and other environmental disruptions that the tenor of the text becomes fascinating.

Some direct quotations are useful at this juncture: "Agriculture disrupts natural ecosystems, but technology often eliminate them [ecosystems] . . . a recent trend has been a return to natural things" (ibid., p. 620). Certainly in the last twenty years, a market has developed for 'organically-grown' vegetables and meat, as well as the herbal remedies of alternative medicine, etc. But, to suggest to students that herein lies the salvation of nature is so incredibly naive as to defy belief. Let us not forget that the production of these "natural things" has, for the most part, been taken over by large-scale capitalist enterprise, who now serve the same 'flower children' that once criticized their greed.

What is Oram's view of the pollution which has been discharged by the advanced capitalist economies? "What are the answers to pollution problems? It seems unlikely that people of the Western World will be willing to give up the comforts of life made possible by technology" (ibid., p. 633). This is nothing less than an unapologetic statement on behalf of the putative rightful economic hegemony of the advanced capitalist economies of the world, who consume 2/3 of the planet's energy resources, and who discharge a similar proportion of the world's pollution.

To answer the questions that he poses, Oram discusses pollution control, sewage treatment, recycling, etc. More ominously, he refers to the promise of nuclear energy -- in other words, he promotes the technological fix of environmental problems after the fashion of the Club of Rome (cf. *The Limits to Growth*).[70] Oram also discusses the population problem, predicting famine, disease, and war. With this stroke, he disingenuously shifts the responsibility for the impending ecological crisis from the industrialized West to the Third World. Oram states that "it [human population] cannot expand indefinitely, insofar as it interacts with the environment" (Oram, 1980, p. 641). The concluding statements which are made in this text are perhaps the most illuminating. Oram champions the 'high-tech' approach to medical science where organs are transplanted wholesale (rather than open a discussion of public health issues that might prevent organ disease), where genes are engineered to eliminate defects from the human gene pool, and where disease will be eradicated: "While humans are tampering with the natural balance of their environment, they also stand on the brink of great discoveries" (ibid., p. 643). In closing, Oram presents an upbeat message:

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[70] The fallacy of assuming that the same technology which generated the ecological crisis that currently threatens the global ecosystem is also capable of setting it to rights will be examined below.

> Scientists and non-scientists alike are becoming aware of and concerned about these [ecological] problems. A new spirit of cooperation, planning, and thoughtfulness has arisen. Hopefully, humans will continue to use their gifts of reason and intelligence well [*sic*]. Thus, they might be able to ensure their survival and that of all other living systems (ibid., p. 645).[71]

The underlying assumptions regarding scientific inquiry which are to be found in this secondary biology text book are not entirely unexpected. Indeed, they conform with the parameters of scientific method and inquiry which have been mentioned earlier. Namely, science is objective in its method, and it is this objectivity which sets it apart from other forms of intellectual activity; science provides the means (technology) for practical progress, and this is linked with the theoretical progress of science; there is the promise of the millennial in scientific endeavour, whereby the problems of humanity will be solved (by the conquest of nature). More dangerous, I would argue, are the assumptions that technology will be able to repair the damage which that very same technology has wrought. On intuitive grounds, this seems to be the height of arrogance coupled with ignorance -- a dangerous combination. And on the grounds of formal logic, the concept would seem to be a contradictory one. Fortunately, it is possible to cite ecological studies which do not rely on intuition nor upon formal logic.

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[71] The final sub-section of the text is entitled "Cause for Optimism." This quotation is exhumed from that sub-section, the length of which is eleven lines. As a bibliographical note, the text that I consulted was my own and was the 1983 Canadian edition. The text (wording) does not differ from the edition which was used for research purposes.

In *The Closing Circle*, Barry Commoner (Chapter 6) uses the example of the attempts to engineer a solution to the problem of the eutrophication of lakes as a consequence of industrial pollution.[72] Commoner's observation is that by attempting to use technology to alleviate the problem, the situation is actually made worse by the intervention of science. This principle may safely be generalized to the multitude of ecological dysfunctions which are a consequence of pollution in a wide variety of situations. The attitude that, in principle, technology may be used to correct ecological problems, on a local or a global scale, that technology has created in the first instance, would be summarily dismissed were it not firmly embedded in the mindset of the elites of business and politics. As it is, this reliance on technology to save mankind is simply one manifestation of the difficulties that a radical New Science would face.

Lest the reader harbour any suspicion that materials have been selectively chosen, let us examine another text that is recommended in the Curriculum Guide. *Modern Biology* (Otto et. al.) examines ecology in a manner that is again essentially descriptive. That is to say, ecology is portrayed in an exclusively instrumental fashion; the flow of energy, chemical cycles, food chains, biotic/abiotic interactions, and the like dominate the discussion. In the area of attitude formation, Otto does not challenge the rationale of capitalist economy which is responsible for environmental disruption. Instead, he simply refers to the need for alternative energy sources. To be fair, he does mention geothermal, solar, and wind energy.

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[72] 'Eutrophication' refers to the blooms of certain types of organisms, mainly algae, which result from the excessive accumulation of nutrients which are not normally found in the waters of rivers or lakes; for example, the effluent from a water treatment plant often contains excessive amounts of sewage which provide food for microorganisms in quantities much larger than normal.

Nuclear energy, however, again figures prominently in his solution to the depletion of fossil fuels.[73] With regard to the attitudes toward the environment that Otto is aspiring to instill among students, the final paragraph of the textbook provides the greatest insight into his understanding of the nature of science and society:

> Industry and legislation have provided money to help solve this dilemma [increasing food production while maintaining a healthy environment]. However, every person needs to take part in restoring the soil, cleaning the water, and purifying the air (Otto, 1981, p. 714).

To me, this statement points to one of the basic fallacies of environmentalism[74] -- in distinction to a more radical and critical view of ecological issues. Otto is championing the idea that ecological disaster may be averted by the initiative of the individual (rather than by investigating the structures of economic and political power which grant industry a relatively free rein with regard to their environmental practices). To refrain from throwing one's soft drink bottle into the ditch is not an ecological act. To purchase a smaller, fuel-efficient vehicle does not challenge the position of science within the institutional structures of advanced capitalism. And the consumption of pesticide-free tomatoes from California ignores the growing movement toward massive water diversion, on a continental scale, to grow those very same tomatoes. The second fallacy of environmentalism has been mentioned several times above, namely, the assertion that the ecological ruptures that have resulted from the technology of advanced capitalism are curable by the application of that same technology. As a final comment, I perceive, in the temptation to instrumentalize even the natural holism of ecology, the ability of the ideology of scientism to co-opt what is instinctively perceived by aboriginal peoples as the totality of relationships in nature (i.e., ecology), and to erect the concept of environmentalism in its place as a degraded version of an understanding of that totality.

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[73] It is most important not to become seduced by the logic of these authors. At no point do they consider creating a society in which there is a far lesser reliance upon fossil fuels, or even the use of alternative fuels such as methanol and ethanol (which burn much more cleanly been than gasoline). Any suggestion to this end would certainly incur the wrath of the oil companies. It is not beyond the realm of the possible that oil companies would be able to promote other curricular materials should such 'sedition' be included in a High School textbook.

[74] I perceive a fundamental difference between the tenets of environmentalism and ecological awareness. Environmentalism seeks to repair the damage resulting from the domination of nature, but without fundamentally challenging the rationales of industrial society and relationships of power which sustain that domination. Ecological consciousness, on the other hand, recognizes the imperative of a new dialogue with nature.

What becomes clear when examining the materials that are available for the instruction of secondary Science is that there are explicit (and implicit) assumptions that permeate the curricular materials, and they may be itemized in the following manner:

i) the instrumental mode of reason is paramount. Embedded in the mode of instrumental reason are all of the precepts of science which have been refined through the Enlightenment

ii) there is a notable lack of any discussion of ethics or a critical examination of the bases of economic and political power which have created the potential ecological disasters that humanity is facing

iii) the treatment of 'environmental problems' remains at a level of instrumental environmentalism. Technology is to be used to correct the dysfunctions created by technology. Any discussion of a radical New Science, which would find its discourse **within** nature rather than without, must be found elsewhere

Prior to engaging in a discussion of the "Dialectic of Enlightenment" and its yearning for a reconciliation with nature -- and the implicit need for an alternative view of science contained therein -- I would like to present a brief commentary on the educational discourse which is encountered at the post-secondary level. At the university level, the treatment of ecology is not significantly different from that of secondary biology, with the obvious exception that the level of complexity increases commensurately. In the Honors and Specialization programs in Zoology, the emphasis is exclusively upon quantitative research. By this, I mean that there is much computer driven model-building such that the variables of an ecological community can be changed with the goal of evaluating the effects of such changes. This sort of research is clearly driven by the requirements of industry. Before strip-mining a section of boreal forest, for example, it is useful for a forestry company to have data in hand which demonstrates that the clear cutting that they desire to undertake can be justified by holding up a study which supports their claim of minimal environmental impact.[75]

Dialogue between instructors and students regarding the social context of science, and regarding the complex constellation of political and economic elites with regard to ecological disjuncture, tends to remain at the coffee tables. There is one course dealing with the History of Biology and one course whose content is directed toward the effects upon the biosphere by industrial society. Students in the Honors Program are encouraged (very strongly) against enrolling in these courses. A student wishing to engage in a discussion of ethics in science or of the philosophy of science must look beyond the Faculty of Science.

Conclusion

The natural sciences do not lend themselves easily to a critique of their epistemological assumptions, on the one hand, and the possibility that they might -

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[75] This is but one example of science serving the needs of capital (and, in the process, throwing some doubt upon the claim of scientific objectivity). Scientific data can easily be manipulated in such a way as to create a desired outcome, and it is not a secret that 'scientific' studies are often used in this fashion. With the active intervention of friendly ('business-oriented') governments, acting to "promote industry and create jobs", the circle is complete.

- in their own right -- be a component of the ideology of advanced capitalist political culture.[76] As I have argued, the natural sciences have acquired a sort of immunity from critique, achieving a common sense status which is accepted unproblematically. I have sought to demonstrate, in the foregoing examination of biology as it actually is conducted in the classroom, that the natural sciences -- biology in particular -- are not immune from an immanent critique. With regard to the relationship of science and technology to the environment, as it is introduced to students in the educational system, one is not even obliged to excavate too deeply to discover some basic presumptions, which have essentially attained the level of 'common sense' knowledge, namely:

i) the method of science is accepted as the valid method of establishing valid knowledge-claims

ii) science is good, because it provides the basis for technological advance, which in its own turn will assure the betterment of mankind

iii) concern about the environment is legitimate, but within carefully defined parameters. Those parameters consist of the exclusion of ethical discourse as well as the elimination of the social, economic, and the political from any debate

iv) environmental damage may well be acknowledged, but the solutions find their genesis in the instrumental mode of reason, and they are unable to escape from that mode of reason

Understood as a totality, the premisses of science in general -- and biology in particular -- have achieved a paradigmatic status which approaches the level of "common sense" in the manner of Antonio Gramsci's usage of the term. I will not again itemize the elements of which the paradigm of natural scientific inquiry is comprised. The most significant aspect, I would argue (and as an introduction to the discussion of Science as ideology), is the extent to which these various components of the scientific paradigm have been accepted as uncritical common sense. Leiss (1974, p. 175) suggests that "science itself becomes ideological when a particular method of arriving at scientific knowledge succeeds in establishing a claim to be the *only* valid entry into the entire realm of objective understanding." The related achievement of science, to which I have alluded several times, is the extent to which its method -- empirical positivism -- has driven epistemology from the scientific discourse. This too is an ideological construct according to the criterion which is put forward by Leiss. The tendency, in contemporary science, whether it be cultural or natural, is to embrace the positive to the exclusion of the negative -- in other words, to exclude the critical element of discourse, without the possibility of which no consensus between humans is possible; and it is only that consensus, achieved by dialogue between humans, which might challenge the constellation of political and economic power that threatens our continued existence in the biosphere.

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[76] I suspect that a thorough examination of the pedagogical practices and underlying epistemological premisses of the social sciences in the classrooms of secondary and post-secondary educational institutions would provide even more clearly evident targets for ideology critique.

Dialectic of Enlightenment

This portion of this essay will examine the genesis of the 'one-dimensional' thought which permeates the fundamental presumptions of scientific discourse in advanced capitalism. I will discuss the possibility of 'making a break' with the culture of scientism and creating a science that operates in harmony with nature rather than engaging in the Enlightenment project of the domination of nature; indeed, the possibility of reconciliation with nature will form the substantive focus of the final section.

The Domination of Nature

In the *Dialectic of Enlightenment*, the opening chapter is devoted to a discussion of the extent to which instrumental reason has driven philosophical critique from the field of scientific discourse. Horkheimer and Adorno leave no doubt as to the consequence of the conjoining of the Enlightenment intellectual project with the distribution of political and economic power under advanced capitalism. Their view of man's relationship with nature is both unequivocal and two-edged. "What men want to learn from nature is how to use it in order to dominate it and other men. That is its only aim" (p. 4). And "Enlightenment behaves toward things as a dictator toward men. He knows then in so far as he can manipulate them" (p. 9). Horkheimer and Adorno understand that the domination of nature, the explicit project of Enlightenment science, carries with it an attendant domination of 'the other'. But for Horkheimer and Adorno, the other is not simply or exclusively nature. The domination of the other implies also the domination of humans by other humans. Bookchin also understands this multifaceted character of the domination of nature. He extends the scope of domination to class and patriarchy as well as nature (Bookchin, 1980, p. 78).

Horkheimer and Adorno (1986) trace the concept of reason through the Western philosophical tradition and find an essential flaw at the core of the Enlightenment concept of Reason. Reason became divorced into two components by the growing triumph of positive science -- one component is idealism, inclusive of which are ideas such as human freedom, an unencumbered human spirituality, morality, etc. The positivism of the Enlightenment consigns these notions to the realm of metaphysics where they become objects of philosophical contemplation. In other words, they lose their status as being relevant to the material world of politics and economics, etc. The other component of reason -- materialism -- became merely an instrumental tool for dealing with existence, existence entailing the subjugation of nature. It was this instrumental materialism which came to be definitive of the

Reason of the Enlightenment.

Horkheimer and Adorno are aware that the essence of modern science (its assumptions and method) is 'one-dimensional', that is to say, exclusively instrumental in the manner in which it confronts nature. In their investigation of the development of Enlightenment thought, they delve into Greek mythology in order to discover the roots of the divorce of Reason into philosophy and materialism. They see in Homer's account of the Odyssey the differentiation of master and slave (or of burgher and labourer) as well as the concomitant domination of nature inherent in Odysseus' solution to the allure of the Sirens. The crew labours, oblivious to the call of the Sirens, while only Odysseus is allowed to hear their music. He conquers the Sirens' call only by denying their call, but at the cost of his spiritual unity with nature. The crew, on the other hand, is denied the knowledge of the Sirens' terrible beauty, as they labour with their ears plugged with wax. Oblivious to the beauty of the Sirens' call, the cost of their salvation is their alienation from nature.

The roots of domination are excavated by Horkheimer and Adorno, the domination both of nature and of human by human, in the metaphors which are embedded in Hellenistic philosophy. Bookchin also argues that the bases of domination are to be found in the pre-Christian philosophies. "Even before the emergence of bourgeois society, Hellenistic philosophy validates the status of women as virtual chattels and Hebrew morality places in Abraham's hands the power to kill Isaac" (Bookchin, 1980, p. 63). In the democracies of the Greek city-states, slavery was institutionalized as a common sense mode of existence and production. And yet, Hellenistic philosophy also understood the desireability of the limited polis, the limit of which was the distance discernible by the human eye. This idea of social organization, in which true community remains possible, provides a useful lesson for the problems which face advanced industrial societies.

Bookchin posits an "archaic equality", presumably existing in neolithic societies prior to the emergence of technologies which permitted the transition to sedentary, agricultural modes of production. Archaic equality recognizes the fact of the inequality among individuals.[77] For Bookchin, "true freedom is an equality of unequals that does not deny the right to life of those whose powers are failing or less developed than others" (ibid., p. 64). Almost certainly, sexual divisions of labour existed as did divisions of labour based on physical strength, or other attributes (such as age, revered as useful to the tribe for its store of accumulated wisdom). The point is that these societies co-existed with nature, with 'each member contributing according to their abilities', and with the implicit understanding that all members of the society would receive an equal share of the tribe's wealth, irrespective of their contribution. With the emergence of sedentary societies that were able to not only thrive, but to produce a surplus (and support a ruling class, therefore), the archaic equality of unequals was swept aside. As the means for the exploitation and domination of nature were refined, equality gave way to political elites and hierarchical social organization. Thus, since the beginning of sedentary civilization, the human project has become one of domination, both of nature and of humans. As Bookchin (1980) argues, the domination of woman by man, of human by human, is coeval with, and intimately related to, the domination of nature.

Reconciliation with Nature: The Transformation of the Enlightenment Project

> Most of us have lost that sense of unity of biosphere and humanity which would bind and reassure us all with an affirmation of beauty. Ultimate unity is

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[77] This conception of the organization of neolithic society is not simply a 'flight of fancy'. Neanderthal dwelling sites have yielded evidence that individuals who were burdened with medical conditions – either congenital or acquired – were nevertheless cared for by the tribe. "Archaic equality" therefore carried with it a 'primitive socialism'.

> aesthetic -- quantitative science is insufficient to embrace an ultimate unifying beauty
>
> (Bateson, 1979, p. 17-18).

This quotation is a delightfully poetic rendering of a problematic which has occupied the theoretical efforts of many, notably the members of the Frankfurt School of Social Research. The reconciliation which Horkheimer and Adorno desire is expressed as a philosophical motif which permeates the pages of *Dialectic of Enlightenment.* Following Hegel's historical synthesis in his *Science of Logic,* human history is seen as the alienation of the Absolute Spirit from itself. The subsequent course of history is the reconciliation of Being with its alienated Essence, the ultimate synthesis being the Notion or Absolute Idea. The ultimate goal of human reconciliation with nature also informs much of the theoretical work of Marcuse; however, Marcuse goes further in attempting to introduce the concept of a "New Science" into the discourse.

In *Science and the Revenge of Nature,* Alford (p. 139) reminds us that the dialectic of Enlightenment is caught in a dilemma. Scientific and technological progress (the abolition of labour) are the *sine qua non* of human freedom, which for the group of Horkheimer, Adorno, and Marcuse is the liberation of the human spirit. Marcuse, in particular, held that the free play of eros was the aim of the human emancipatory project. But the abolition of labour, and the application of technology that this emancipation required, produces an inescapable dilemma -- namely, the process whereby liberation is accomplished results in the destruction of the subject conditions of freedom.[78] The problem then becomes: how is the emancipation of the spirit accomplished with humans not freed from a confrontation with nature? Marcuse (1964) argues that a New Science would enable mankind to create the conditions for an interaction with nature that came from **within** nature rather than without. A further question which emerges from positing the possibility of a 'New Science' is whether a social revolution is a prerequisite to mankind's reconciliation with nature. Marcuse, in his later works ("The End of Utopia" -- 1967, quoted in Alford, 1985, p. 33), suggests that it would be possible to aspire to the realm of freedom even while yet grounded in the realm of necessity. Although this concept is certainly at variance with Marx, particularly the Marx of *The Grundrisse*, recall that Gramsci also embraced the notion of the utopian future, even though the political struggle in the historical present would be fought on the terrain of contradictions.

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[78] Recall the quotation from *Dialectic of Enlightenment* (p. 57): "The subjective spirit which cancels the animation of nature can master a despiritualized nature only by imitating its rigidity and despiritualizing itself in turn."

Marcuse makes a serious effort to sketch out both the practical and spiritual conditions of reconciliation with nature. His works ultimately produce points of view which are antithetical, but this does not diminish the value of his attempt. Stated in broad terms, the antinomies of Marcuse's philosophy may be outlined as follows:

> i) Marcuse understands the need for a qualitatively different Science which does not dominate nature, but rather emerges from within nature and operates in concordance with it
>
> ii) In many of his works, however, it would seem that his concerns are directed toward a society in which the abolition of necessity would provide the preconditions for the liberation of eros. The achievement of this more utopian view of a future emancipated society includes a conception of giant machine industry providing for human wants (unfortunately, at the expense of an authentic reconciliation with nature)

Be that as it may, let us examine Marcuse's theoretical excursions vis-à-vis the possibility of creating a qualitatively different society based upon a science which precepts are not those of the Enlightenment.

In *Eros and Civilization*, Marcuse suggests that the total automation of labour is a prerequisite of human freedom, i.e., the free play of eros. This is one of the most criticized contradictions of Marcuse's philosophy. On the one hand, he (as do Horkheimer and Adorno) seeks reconciliation with nature. This reconciliation is pretty much a straightforward reading of Hegel's historical synthesis regarding mankind's location **within** the history of nature. In other words, there was an original unity of man with nature which was sundered. The ultimate reconciliation thus entails the restoration of this unity. But Marcuse's idea of machines providing for the wants of all humanity is fraught with problems, not the least of which is that nature must be subdued. If this is to be the case, how then reconciliation?

Marcuse (1972) seems to vacillate between an understanding of science and technology that is essentially neutral, and an understanding that explicitly acknowledges the class basis of domination -- domination which uses science and technology. In the class society of capitalism, domination and exploitation are actually concealed by the 'technological veil'. In Marcuse's view, "science and technology are the great vehicles of liberation, and [that] it is only their use and restriction in the repressive society which makes them into vehicles of domination" (p. 21). This is, however, misleading; Marcuse **does** understand the absolute prerequisite of a New Science:

> For freedom indeed depends largely on technical progress, on the advancement of science. But this fact easily obscures the essential precondition: in order to become vehicles of freedom, science and technology would have to change their present direction and goals; they would have to be reconstructed in accord with a new sensibility -- the demands of the life instincts
> (ibid., p. 28).

When Marcuse is operating in the philosophical mode which understands the science of the Enlightenment to contain domination as an inherent and indispensable feature of its project, he is indeed clear about the absolute necessity for a science that is grounded, not in domination, but in such a fashion as to recognize the rights of Nature. This idea is grounded in the fundamental understanding of Critical Theory that the consequence of the exploitation of 'the Other' is its alienated objectification (reification). The exploitation of the Other, whether it be other humans, or non-sentient nature, reduces them to mere things to be used or abused as the possessor of power sees fit.

In *One-Dimensional Man*, Marcuse makes a strong plea for a New Science, a science which does not dominate nature and, therefore, mankind:

> The point which I am trying to make is that science, *by virtue of its own method* and concepts, has projected and promoted a universe in which the domination of nature has remained linked to the domination of man -- a link which tends to be fatal to this universe as a whole . . . Thus the rational hierarchy merges with the social one. If this is the case, then the change in the direction of progress, which might sever this fatal link, would also affect the very structure of science -- the scientific project . . . consequently, science would arrive at essentially different concepts of nature and establish essentially different facts
>
> (Marcuse, 1964, p. 166-167).

Marcuse's New Science is certainly one possibility in the quest for a reconciliation with nature that would liberate the human spirit and end the domination of nature and humans, but this places reconciliation with nature on an entirely different foundation than the instrumental science (and technology) of the Enlightenment;

and, indeed, why not -- the development of technologies which do not destroy ecosystems is the only hope for the salvation of Mother Earth. Unfortunately, Marcuse did not elaborate upon the shape of a non-exploitative science/technology. Given the requisite political conjuncture, however, there is no reason to believe that the task could not be accomplished.

In sum, there is an unresolved tension in Marcuse between his acceptance of the tenets of instrumental science as a prerequisite for the abolition of labour and the necessity for a science which not only does not dominate nature, but emerges from nature. In either case, Marcuse is seeking after a utopian existence in which the aesthetic/erotic dimension of humanity is the *raison d'etre* of man's interaction with nature. Indeed, it would not be difficult to argue that Marcuse's intellectual terminus was very much concerned with the 'aesthetic dimension' of life. Issues of class and domination under capitalism had become somewhat secondary. This is, however, not to diminish the potential that was woven throughout his critique of culture and domination in the 'one-dimensional' society, a critique which permeates his work from his very earliest association with the Frankfurt School. It is important not to lose sight of the connection between Marcuse's critique of advanced capitalism and its inherent domination of mankind with the search, in Western mythology, for the roots of the domination of nature which informs the *Dialectic of Enlightenment* of Horkheimer and Adorno.

The 'Realpolitik' of Reconciliation

Even allowing for the viability of a New Science, humanity would be faced with perhaps insurmountable obstacles regarding the fundamental change in our relationship with nature. As I have demonstrated by examining some of the works of the Frankfurt School, even the problem of reconciliation contains some potentially intractable contradictions.

This is an extremely difficult philosophical problem to resolve. Perhaps it is most fruitful to acknowledge that the problem cannot be resolved. The reconciliation of mankind with nature presupposes that, in the mode of the Hegelian synthesis, an original unity of man and nature existed, and that the quality of this unity could be specified. In the Hegelian mode, the course of human history was that of the Absolute Spirit seeking to, in a sense, restore Paradise Lost. Of course, the problem is that ultimate reconciliation does not restore paradise as it existed before the original sin of *Homo habilus*, i.e., the construction and use of the Tool.

Even if one could designate a point in human evolution to which it would be desireable to return, the fact that the development of tool-use was an incremental process renders this exercise problematic at best. Do we wish to return to a neolithic existence which existed prior to organized, sedentary societies, and which had not yet developed the class boundaries of those societies (the original sin for Marx)? I think not. In any case, such musings are just that. The application of technology by advanced industrial society has rendered any return to a pristine past an impossible project. A hunter-gatherer mode of existence was feasible when human populations were small, and when humans were able to exist in a unity with nature. With nearly six billion humans living on the planet Earth, there is quite obviously no return; hence, reconciliation with nature cannot imply the re-uniting of mankind with nature on terms such as these.

Marcuse's idea of a qualitatively different science which would be deliberately organized so as not to seek to dominate nature is an appealing one. But the question of implementing such a project in practice is highly problematic. In principle, there are no technical objections to employing alternative technologies (solar power, wind turbines, harnessing wave energy, etc.). The political realities at this current juncture in history do not provide a great deal of hope, unfortunately.

In the first place, such a massive 're-tooling' of the technology of advanced capitalist societies would require the collective social will and political mandate which, virtually by definition, could never exist in a capitalist society. Thus, the emancipatory technological project necessarily presupposes a new stage of human society -- whether we designate this society 'socialist' or 'communist' is not relevant. The point is, a massive technological re-tooling presupposes such a political conjuncture. It is instructive, and perhaps necessary to remember, that the issue is also a vastly different style of life -- different in the sense of being conceived of democratically by humans in 'ideal speech situations', and free from the coercion of profit and those who would desire to realize it from the surplus-value of labour. The 'downsizing' of society's expectations regarding what constitutes the 'good life' would in itself be a daunting exercise in public discourse and education. Nevertheless, I would again argue that, in principle, the creation of a new society which lives in relative harmony with nature is not beyond the realm of the possible.

There is, however, a second problem. The advanced capitalist economies of the world have, while creating pollution and ecological dysfunction, nevertheless delivered the goods. The adjunct to this achievement has been the hegemony of a relatively small minority of humans using a large majority of natural resources and energy. In the developing economies of the world, not to mention the abjectly impoverished countries of the Third World, there is an insatiable desire for the good life that the the advanced countries would then wish to deny to them. At the very least, the advanced industrial countries, having introduced the New Science, would be obliged to assist the majority of humanity to follow their lead, lest their development irrevocably destroy the global ecosystem. It is, however, perhaps the epitome of hubris to assume yet again that the 'white' countries of the West should presume to lecture the great masses of humanity on the subject of the husbandry of the global ecosystem. Still, it is abundantly clear that should the majority of mankind choose -- or, rather, be driven by the logic of capitalism -- to follow the same path of economic development, then the consequences would be catastrophic for Mother Earth. Quite obviously, the political solutions will necessarily be found on a global level, and this presupposes an effective world government (and by this, I do not refer to the 'new world order' in which the dominant world economy benignly exercises its political, economic, and military hegemony for the benefit of the remainder of humanity). A global government that would provide the political infrastructure for true democracy (a democracy which decides how economy and society are to be organized, and which decides rationally how science and technology are best utilized) is perhaps a truly utopian dream.

Science as Ideology

Science and Capitalist Political Economy

To conclude this essay, I wish to touch upon issues in science and society which challenge the conventional, common-sensical, wisdom of science as I have elaborated it in the course of the chapter. In an earlier section of the chapter, I mentioned that Leiss (1974) made the assertion that science has itself become an ideology insofar as its method has become uncritically accepted, and that science, in consequence provided the only valid method of understanding objective reality. His thesis may be conveniently condensed into the statement that

> the vision of the human domination of nature becomes a fundamental ideology in a social system (or of a phase in the development of human society considered as a whole) which consciously undertakes a radical break with the past, which strenuously seeks to demolish all 'naturalistic' modes of thought and behavior, and which sets for itself as a primary task the development of productive forces for the satisfaction of

human material wants[79] (ibid., p. 179).

For those theorists of society who understand that a critical critique is mandatory if the complete dynamic of capitalism is to be excavated, the common sense understanding of the role of science and technology in capitalist society as "the *only* valid entry into the entire realm of objective understanding" (ibid., p. 175) represents the ideological presentation of the tenets of science which must be challenged.

Ernest Mandel, in *Late Capitalism* (p. 501), proposes that the cult of technological rationalism is the central element of ideology in advanced capitalist society. Granted, Mandel is very much a theoretical essentialist in terms of how he understands the base/superstructure metaphor of Marx (a metaphor which has acquired a crude instrumentality in Marxist structuralism). Still, however problematic Mandel's understanding of the relationship between the economic base and the ideational superstructure may be, he does point to a valid argument -- namely, the extent to which science and technology are themselves integral components of the ideology of advanced capitalism.

Mandel posits four levels at which 'technological rationalism' is inherently ideological, and at which technological rationalism also runs afoul of capitalist culture and the inherent dynamic of capitalist political economy. First, he argues that the cult of technological rationalism is a "typical example of reification" (ibid., p. 503). The material world that has been built by 'dead labour' is removed from the human psyche as a human creation. It exists outside of immediate human sensual experience. Second, the conquest of society by science is in no way complete. We are witnessing the emergence of fundamentalist religiosity, astrology, and other similarly irrational modes of explaining existence. Third, Mandel argues that technology has not solved the fundamental contradiction of capitalism -- the exploitation of labour through the extraction of surplus-value (disguised as profit). Twenty years after *Late Capitalism* was written, this contradiction has intensified to an even greater degree. Capitalism has restructured itself to the extent that we are now experiencing economic growth with increasing unemployment, a logical consequence of the dynamic of capitalism. Fourth, capitalism remains irrational in an overall sense, in that attempts (by the individual capitalist) to increase the rate of profit by substituting machines for humans ultimately lead to a general decrease in the rate of profit and the consequent waste of human labour. "*The real idol of late capitalism is therefore the 'specialist' who is blind to any overall context*; the philosophical counterpart of such technical expertise is neo-positivism" (ibid., p. 509).

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[79] Leiss points out in other parts of *The Domination of Nature* that this 'satisfaction of human material needs' also entails the accumulation of capital in the hands of the elites of capitalist society.

I do not wish to undertake an examination of the philosophical implications that are incurred by Mandel's essentialist understanding of the relationship between the economic base of capitalism and the ideational superstructure. Nevertheless, Mandel's critique contains relevant insights into the relationship of technology to the dynamic of capitalism and to the wider social fabric of late capitalism.

Stanley Aronowitz undertakes an analysis of the extent to which the ownership of the access to science and technology sustains the economic and political hegemony of the ruling classes in capitalist societies. The vast majority of individuals is denied access to the power which flows from this ownership. Aronowitz' central thesis is that Science has endeavoured to demonstrate its objectivity and freedom -- its autonomous power -- from modes of social discourse such as the political and the economic. But it is this desire to distance itself from social discourse that renders science ideological:

> I argue that this [autonomous] power is constituted not

> only by the specific knowledges generated by scientific inquiry, but by its truth claims. For our culture requires belief in discourse that it takes outside the universe of social determination, whether this be religion, magic, or science (Aronowitz, 1988, p. viii).

Thus, Aronowitz is questioning the actual validity of the truth claims of science -- i.e., its epistemological self-understanding. Regarding the extent to which science, and its control, is embedded in the political economy of capitalism, Aronowitz' argument may be stated as follows: "claims of authority in our contemporary world rest increasingly on the possession of legitimate knowledge, of which the scientific discourses are supreme. . . . Science and its slightly degraded partner, technology, intrude into what we mean by economics, politics, and culture" (ibid., p. ix).

With regard to Aronowitz' understanding of the imperative of a new relationship with nature, his perspective is not far removed from Marcuse's New Science. He also acknowledges the extent to which the common sense view of the world -- in the advanced capitalist countries which have a plethora of material goods, and the developing countries which would desire them -- must change if the global ecosystem is to survive: "For the philosophy of ecology, a world without domination, domination of nations, of women, of nature, of cultures, requires a radically different conception of science and technology since what it entails is a radically different concept of the everyday" (ibid., p. 21).

As a final comment on Aronowitz' critique of Science and Society, it is important to reinforce the understanding that critical theories of society in no way present a unified or monolithic understanding of the dynamic of capitalist society. I have earlier touched upon the diverse readings of Marx that compete in social theory, often with highly acrimonious debate. Throughout the chapters on Marx and Gramsci, I made reference to the structuralist interpretation of those authors, and

I pointed to the deficiencies in that perspective. The Marxist structuralist apprehension of science generally follows the line of reasoning that the Enlightenment project must be completed; in other words, the structuralists operate with an uncritical understanding of science. Aronowitz effectively dismisses the structuralist, and specifically the Althusserian structuralist, perspective on science as essentially un-critical and un-dialectical. Althusser accepts the tenets of science, and aspires to prove that dialectical materialism (Marxism) is a science. But, as Aronowitz argues, Marxist structuralism is neither dialectical -- having driven Hegel and contradiction from its discourse -- nor is it materialist, misapprehending the metaphorical intent of the base/superstructure of Marx's philosophy (ibid., p. 178 - - 180).

Post-marxist philosophers such as Foucault also understand the ideological nature of science and its problematic epistemology. Indeed, for Foucault, "knowledge is not an epistemological site that disappears in the science that supersedes it" (Foucault, 1972, p. 184). As was the case for Gramsci, the knowledge produced by science is located within, and conditioned by, the socio-historical circumstances in which it is produced (in Foucault's terminology -- the *discursive* formation). Foucault goes on to state that "ideology is not exclusive of scientificity" and that consequently, science must be treated "as one practice among many" (ibid., p. 186). And for Foucault, as well as Aronowitz, the linkage between knowledge and power is characteristic of modern society.

To this point, the argument regarding science as ideology has focussed on the critiques of non-scientists. It is both instructive and encouraging to realize that there is a growing contingent (representing many highly respected workers) in the scientific community who are undermining the premisses of science by recognizing the ideological nature of science, particularly in the sense of the manner in which science may be used to justify the prevailing distribution of political and economic power.

As an example of contemporary scientific discourse that has come to realize its role in the political economy of advanced capitalism, I refer the reader to Lewontin (1991) where he states quite unequivocally that "explanations of how the world really works serve another purpose, irrespective of the practical truth of scientific claims. The purpose is that of *legitimation*" (ibid., p. 5). Attacking certain truth claims of contemporary biology as purely ideological, Lewontin debunks the widely accepted premiss that intelligence is a function of the genetic endowment of the individual. Lewontin demonstrates convincingly that scientists who hold to the theory of biological determinism do so because they have concluded in **advance** that genes determine intelligence. From that location, they set out to prove that what they 'know' to be true is demonstrable by the tenets of science.[80] In contrast, Lewontin refers to studies which demonstrate that genes really have very little to do with intelligence, and that the most important determinants of intelligence are social in nature -- wealth, political power, and social class. (Ralph Miliband, in *The State in Capitalist Society*, demonstrates empirically that new recruitment to the ruling class across historical time in the capitalist countries of the West is exceedingly minimal; the decisive factor regarding the composition of the ruling class is that one is born into it.). The attempt to link genes (and race) with achievement (as a function of intelligence) is nothing more than a blatantly ideological operation, justifying a society of exploitation and inequality in the name of science.[81]

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[80] Recall that this is an ideological operation from the perspective of Marx, who undertook his critique of political economy precisely for the same reasons, namely, that the political economists 'assume as a fact that which they must set out to prove, namely the relations between two things' (*1844 Manuscripts*).

[81] Mifflen and Mifflen (1982, ch. 3) study the same problematic from a sociological point of view, and they come to essentially the same conclusions. Their problematic is the challenge mounted by educational theorists (e.g., Arthur Jensen) who put forward the argument that educational attainment is genetically determined. The most invidious aspect of Jensen's argument is that IQ can be identified differentially between the races -- the white races being the most intelligent.

Conclusion

This chapter has admittedly been 'painted with a broad brushstroke'. The discussion has shifted from the instruction of science, to the roots of the Enlightenment project of the domination of nature, concluding with an examination of the possibility that science itself is a form of ideology ("ideas in the service of power", Thompson, 1984). Consequently, some of the concepts have been presented in an admittedly cavalier fashion. Nevertheless, taken as a whole, the ideas which have been discussed form a coherent totality. Let us recall the central concepts of the chapter.

I have contended that science is most definitely not a neutral endeavour. The manner in which science and technology are employed must always be evaluated in terms of their use to, and usefulness for, the elites of capitalist society. Furthermore, many of the claims of science (cf. Lewontin) are quite clearly -- though perhaps not deliberately -- mistaken. As an aside, I must point out that Lewontin is not singular among the scientific community. I chose him simply as an example of scientists who have come to realize their contingent status within the matrix of capitalist society and culture.

In the section dealing with the dialectic of Enlightenment, I argued that the domination of nature has roots in Western philosophy that may be traced back more than two millennia. With the intellectual Enlightenment coupled to the rise of industrial capitalism, this domination has come to include not just the domination of nature but of humans by humans -- this consequence of domination is intimately related to the discussion of science and ideology. Ideology serves its role in advanced capitalist society by promoting the accepted paradigm of science, a paradigm which does not acknowledge the use of science as a tool of domination, but rather as a neutral means of advancing the common weal of mankind. The examination of the domination of nature also contains the immanent critique of the

Enlightenment and the profound hope, and, indeed, the urgent need for its (nature's domination) supersession through the development of a New Science, a new dialogue with nature.

Finally, the examination of pedagogical practice in contemporary capitalist society reinforces the idea that ideology in advanced capitalism, and in this discussion the ideologies of scientism and environmentalism, has become totalized. The closure of the normative totality is complete, and this is demonstrated very well by even a cursory study of curriculum materials and pedagogical discourse. It is not an accident that what passes for knowledge in the classroom is a mirror of the larger society. By this statement, I do not intend to claim that a crude correspondence exists between the political economy of late capitalism and the myriad of social and cultural institutions that form the matrix of this society. There are indeed correspondences, I would argue, but sites of discourse such as educational institutions have always maintained a certain autonomy and remain sites of resistance and contestation within capitalist society.[82]

The fact remains, however, that the instruction of science -- in this critique, biology -- deliberately omits: a study of the epistemological underpinnings of science; an examination of the history of science as part of the larger study of ideas; a critical critique of the role of science in the domination of nature, and the broader social problematic which arise from that domination; a holistic approach to ecology, preferring instead an instrumental presentation of the tenets of ecology and the consequent degradation of ecology into an instrumental environmentalism. That these concepts, constituting as they do a radical critique of capitalist society, are omitted from pedagogical discourse, speaks to the power of the ideological hegemony of advanced capitalism as it (ideology) obscures the role that science plays in the maintenance of the domination of the elites. As a final comment, the preeminence of these ideas is a marker of the extent to which neo-positivism has gained the ascendancy in contemporary scientific discourse, indeed in all arenas of human interaction. To a pessimistic observer of society, it would seem that a Critical Theory of society has been driven from the field. It is incumbent upon those optimists who remain committed to an emancipatory political project to discover loci where the ideological and political hegemony of advanced capitalism may still be challenged.

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[82] Although the dynamic of late capitalism has, during the last few years, extended even to such semi-autonomous institutions as the school. Teachers are becoming ever more adjunct employees of the State, and their options in pedagogical practice are becoming limited. The infiltration of 'modules', or pre-packaged instructional units, which are provided by corporate capitalism, is an insidious example of the 'enclosure' of the school.

General Conclusion

True Journey is Return

(Ursula K. LeGuin, *The Dispossessed*)

Ideology, Science, and Society

This work was conceived as a project which would examine selected Marxist and neo-Marxist perspectives on the concept of "ideology." The fact that the field of enquiry became limited to a comparative critique of only Karl Marx and Antonio Gramsci was dictated by the enormous range of theorists who are broadly located in the Western Marxist tradition. As I mentioned at the outset of Chapter II, even within Marxist theory, a broad spectrum of contending theoretical positions exist regarding even the basic tenets of Marxist theory; e.g., the construction of consciousness and hence, the nature of ideology; the relationship between the economic base and the cultural/political superstructure; the importance/necessity of the working-class as a historical subject for social change; the epistemological status of Marxism (science or critique?). And these problematics by no means exhaust the regions of theoretical contestation within Marxism. As I have sought to point out during the course of this paper, interpretations of Marx range from perspectives which 'out-Hegel Hegel' (cf. Lukács and *History and Class Consciousness*) to the extremes of French structuralism, which seeks to discover, in Marx, a science of society which is 'closed' in terms of its epistemology. [83]

Hence, in the interest of maintaining a manageable focus to the paper, I chose to exclude much of neo-Marxism and to concentrate on a comparison of the works of Gramsci with those of Marx. Gramsci is arguably one of the most important contributors to Marxist theory in the 20th century, particularly regarding studies in ideology; thus was I able to maintain a certain order in my investigations. I deliberately chose Antonio Gramsci since his theoretical works represent excursuses into the terrain of social consciousness and ideology, studies which were undertaken by Marx, but not in the rigorous systematic fashion of Gramsci. As I stressed earlier, the expansion of these concepts by Gramsci do not point to deficiencies in Marx's theoretical works; rather, we are made aware of the contingent nature of all theorizing, contingent in terms of the specific historical conditions from which all thought emerges and the unique theoretical problematics which each epoch of history presents to us.

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[83] What do I intend by the use of the word 'closed'? I mean a literal interpretation of Marx's musings about the 'beginning of human history' following the attainment of a 'true' communist society. I find a disturbing resonance of the totalitarian in a vision of communist society where happy workers fulfill themselves in harmony -- the sort of harmony that socialist realism evinced in the art and poetry of the state socialist societies of Eastern Europe.

The second section of the paper represents a rather more empirical study of but one dynamic of the ideology of contemporary advanced capitalist society, namely, the manner in which Science itself has become subsumed within the ruling ideology as a whole. By examining Marx and Gramsci's understanding of the 'episteme' of the natural sciences vs. the cultural 'sciences', I hoped to forge a theoretical connection between the studies of ideology in Chapters II and III and the concluding chapter which investigated the status of science in advanced capitalist society -- in its philosophical presumptions, in its treatment in pedagogical discourse, and in its role as an integral component of the ideology of advanced capitalism.

To conclude this paper, I shall first review the substantive points which were covered in the theoretical sections on Marx and Gramsci, thus enabling an assessment of the extent to which I have clarified Marx and Gramsci's understanding of critique and the ability of that critique to bring to light a critical conception of 'ideology'. Second, I will discuss the problematic of the domination of nature, and the extent to which that domination has become subsumed within the ruling ideology. Where appropriate, I will bring out the relevant points that Marx and Gramsci bring to the discussions that have engaged Critical Theory -- among others -- regarding the very real possibility that the ruling elites of business and their political allies, by virtue of their control of science and technology, are about to render Mother Earth unviable for the global ecosystem as it now exists. Consequently, I will review my critique of 'scientism' and its uncritical acceptance into the realm of what Gramsci called 'common sense', as well as the concept of science as ideology. Embedded within this discourse will be the implicit and recurring theme that the reconciliation of human needs with the needs of nature is mandatory if we are to avoid the crime of Matricide, a crime for which there would surely be no redemption.

Marx's Contribution to Theory

As I mentioned in Chapter II, in his early critique of Hegel, Marx believed -- with Hegel -- that originally a subject/object unity had existed, and had been sundered. For Marx (and for Hegel), the telos of human history was the reconciliation of mankind with himself and with nature. The idea of supersession/transcendence linked Marx's theoretical works to Hegel's grand theoretical system of human history. Both considered the *Aufhebung* of alienation to be centrally important to any theoretical system. Indeed, as I stressed throughout the discussion of Marx's theoretical programme, the normative commitment to the transcendence of alienation was of central importance throughout Marx's academic career. The alienation of labour was a theme that appeared in the *1844 Manuscripts* and continued throughout his so-called 'mature' works. In the opening chapters of *Capital I*, Marx deals with the "Fetishism of Commodities", the alienated objectification of labour. Throughout *Capital*, the theme of alienation appears repeatedly.[84] More than any one aspect of Marx's works, his concern with the restoration of an authentic human spirituality is evinced by this motif of the transcendence of alienation, and it provides a direct link to the theoretical premisses of the Frankfurt School, the works of whom were discussed in the second section of this paper.

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[84] It was the "Fetishism of Commodities" as alienated objectification that provided Lukács with the problematic that emerged as the concept of 'reification' in *History and Class Consciousness*. The idea which Lukács was putting forth was that the world of objects, produced by alienated labour, also produced a false consciousness of the world on the part of the working class.

In my 'excavations' of Marx's theoretical works, I was also struck by the extent to which negative dialectics remained central to Marx's method. This legacy of Marx's theoretical confrontation with Hegel provides another firm connection to the fundamental tenets of Critical Theory -- the fact that we live in an unfree society; the fact that, under the aegis of the ruling elites, we experience the domination of one class by another, of women by men, of one race by another, and the unbridled, uncontested domination of nature. For Marcuse, Horkheimer, and Adorno, negative dialectics provided the method whereby an unfree society might be penetrated to the core of its ideological bases, unmasking the distorted forms of thought which provided justification for a dangerously disordered social formation -- advanced capitalism.

These two central components of Marx's works -- alienation and negative dialectics -- reaffirm my contention that Marxism cannot be codified as a science or as a closed theoretical system,[85] and certainly not in the manner of structuralist Marxism and its even cruder variant, dialectical materialism. For those searching, in Marx, for a systematic programme of political emancipation, there is unfortunately a certain disappointment. Marx himself did not provide a schema for the strategies and tactics of political struggle; the future praxiological interpretations of Marx, in this regard, would be left to the revolutionaries of the 20th century -- for good or for ill.

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[85] I would argue that Marx would abhor the idea that even in a future communist 'utopia', the normative totality would be closed. Thought and discourse must necessarily be open-ended lest totalitarianism should become equated with freedom.

Gramsci and Ideology

Marx did not undertake a systematic study of ideology and social consciousness. As I stressed in Chapter II, the concepts are there to be found in Marx's work, but only at the cost of a significant 'mining' of Marx's collected works. Antonio Gramsci, by contrast, set himself the singular task of examining in detail the concepts of 'ideology' and 'false consciousness'. In his explication of ideology, Gramsci did not neglect the superstructural forms through which the ideology of the ruling class was disseminated in the wider society (the press, educational institutions, the family, the church, and so on). Of much greater significance to a theory of revolutionary praxis was his systematic examination of the components of social consciousness. As I argued in the Gramsci chapter, the constituents of social consciousness (religion, folklore, common sense) could indeed be considered 'false' consciousness, emerging as they were from a distorted, contradictory social practice. Nevertheless, it was from this terrain of contradictory consciousness that a revolutionary praxis must perforce emerge, insofar as 'the philosopher of praxis must posit himself as an element in the contradiction'. Further, I sought to demonstrate that this conception of an imperfect revolutionary hegemony was very much at odds with the conception of Lenin and Lukács, for whom the ideology of the working class must be politically/philosophically correct; otherwise, it would be suspect as having been co-opted by the bourgeoisie.

Gramsci went far beyond Marx by considering ideology in a specific, historical social formation to essentially represent the *Weltanshauung* of that age. This represents a significant change in the understanding of what is meant by 'ideology'. Marx had limited the use of 'ideology' to the inversions in thought which derived from a failure to understand the form/essence contradictions in social relations.[86]

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[86] Although Marx did leave the possibility open for developing the concept of 'false consciousness' in the early chapters of *Capital* ("Fetishism of Commodities"), *inter alia*. As I indicated earlier, Lukács expanded this area of Marx's critique to his notion

Gramsci, on the other hand, extended the conception to the terrain of political struggle, wherein a revolutionary hegemony would seek to gain the ascendancy over the ruling ideas of the ruling class. With regard to Gramsci's understanding of Science, in one aspect, he goes beyond even the most radical critique levelled by the Frankfurt School. He considered science, that is to say, the practice of science, to be as historically contingent as other forms of thought (ideology), and he undertook a critique of science that did not spare it from the anti-positivist attack in which he engaged all forms of social discourse.

Unfortunately, Gramsci retained the ambiguity with regard to mankind's relationship to nature that much (most) of Marxism has been plagued by -- namely, the tensions between necessity/human freedom/the domination of nature. As I pointed out in my discussion of Marcuse, in particular, this issue has not achieved satisfactory theoretical resolution. Marx himself, while holding mankind's reconciliation with nature as a central imperative of the supersession of capitalism, nevertheless remained trapped in the Enlightenment understanding of nature as something outside of humanity to be used howsoever humanity -- that is to say, the ruling elites of capitalism -- should deem appropriate.

Science, Ideology, and Discourse in Capitalist Society

The final section of this paper demonstrated, with some force, I hope, that the presumptions of science -- its telos, its method, and the un-critical understanding of its own epistemology -- have become subsumed as integral components of the ideology of late capitalism. The capacity of science to both save humanity from itself as well as to usher in the millennium of peace and plenty has achieved the status of what Gramsci called "common sense." For the 'masses' and ruling elites

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of 'reification'. When looked at from this perspective, one can see in Marx the seminal idea of a distorted mass consciousness.

alike, the position of science is unquestioned. An examination of pedagogical discourse reinforces my assertion that science, having become the sole mode of entry onto the terrain of accepted knowledge-claims, has become undeniably ideological in nature. To that extent, Gramsci's conception of ideology and mass consciousness is still relevant in contemporary social critique, in that he recognized science as no less historically contingent (and ideological, therefore) than other forms of knowledge which formed the hegemony of an historical epoch.

For the philosophers of the Frankfurt School, the triumph of positivism in all modes of discourse -- science in particular -- served to render advanced capitalism one-dimensional. By 'one-dimensional', Marcuse, Horkheimer, and Adorno meant a society in which the human spirit had become alienated from itself and from nature as a consequence of the triumph of the technocratic society and its concomitant domination and exploitation of the many by the few. A corollary of this material exploitation, an intrinsic feature of capitalism, has been the closure of the ideational totality, the inability of the dominated subject to speak his word of protest. The domination of nature is a necessary consequence of the disenchantment of nature through its conquest by science under the control of the ruling economic and political elites.

So, then, what is to be done? The reconciliation of a despiritualized and badly misused natural world with an alienated human spirituality is an obligate component of the completion of the journey of the human species. Without this reconciliation, the time-frame for the collapse of the global ecosystem becomes problematic. In *The Sixth Extinction*,[87] Richard Leakey and Richard Lewin discuss what the implications are for the continuing exploitation of nature. They have calculated the (approximate) numbers of species of organisms which are becoming extinct on a yearly basis. By their calculations, they have determined that at some point in the future (again, the exact number of decades is not relevant), humanity will have achieved -- through the decimation of life on Earth -- the so-called "Sixth Extinction." They are referring to the other major extinctions in the geological history of the Earth. Notable examples are the die-off of the dinosaurs at the end of the Cretaceous (64 million years b.p.) and the mass extinction of 95% all life at the end of the Permian (225 million years b.p.). Leakey and Lewin locate the coming Sixth Extinction among the others that have occurred during the history of the Earth.

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[87] This book was released in February, 1996, and consequently its inclusion in the text of this paper was not possible.

As I pointed out earlier, the solution for the coming disaster is most definitely **not** to be found in the technological 'fix' of environmentalism, one of the components of the ideology of scientism. We, humanity, must discover the sites where a truly emancipatory political project might find a beginning -- such a project is surely a *sine qua non* of the reconciliation of our species with the natural world. Without the reunification of our spirituality with the natural world, without the end of the domination of humans by other humans, the human species will surely become an asterisk in the life of Mother Earth. "True Journey is Return" -- the long journey of the human species **must** find reconciliation and transcendence if it is to survive.

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